SEPTEMBER
1956

fueloil & oil heat

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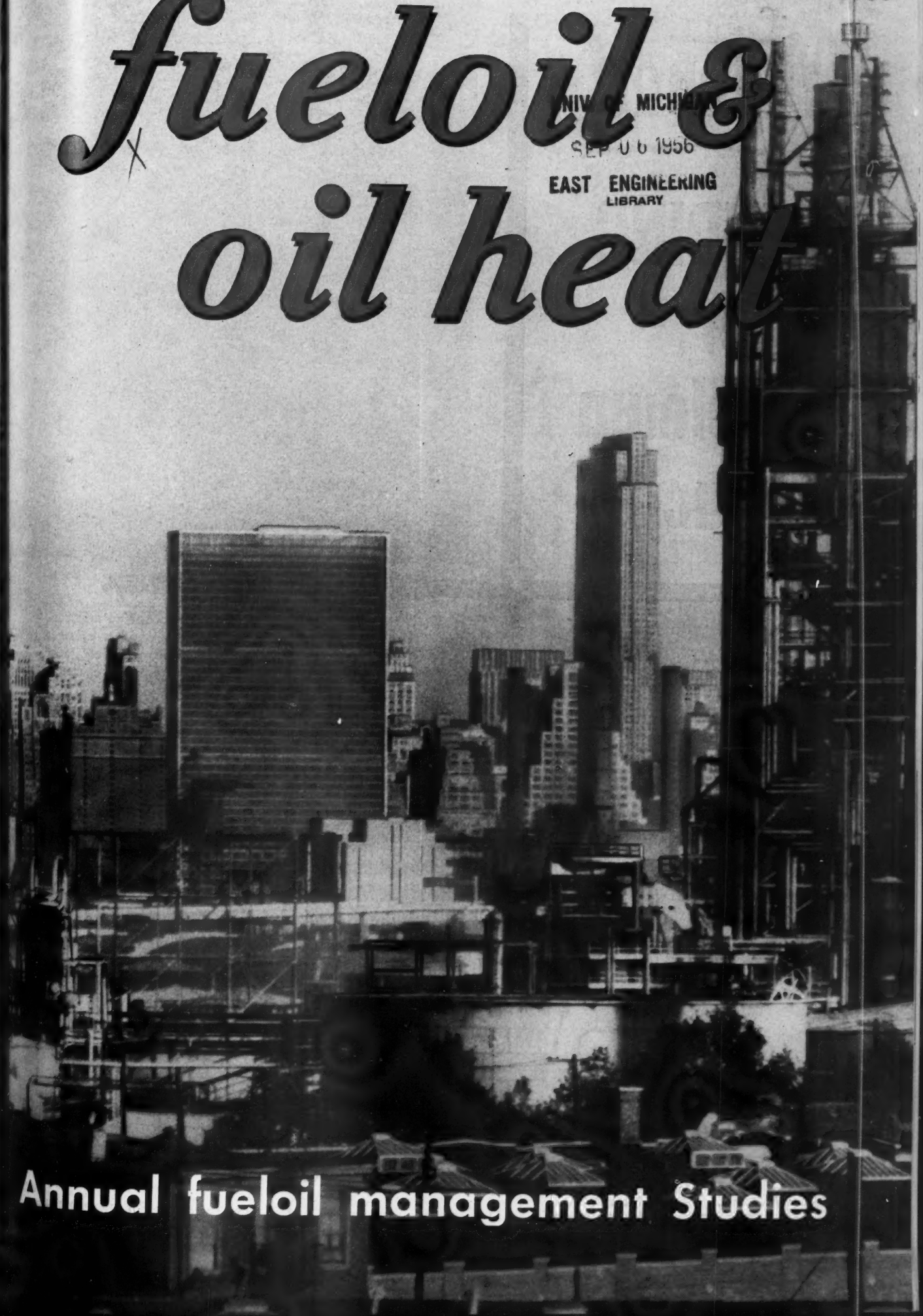
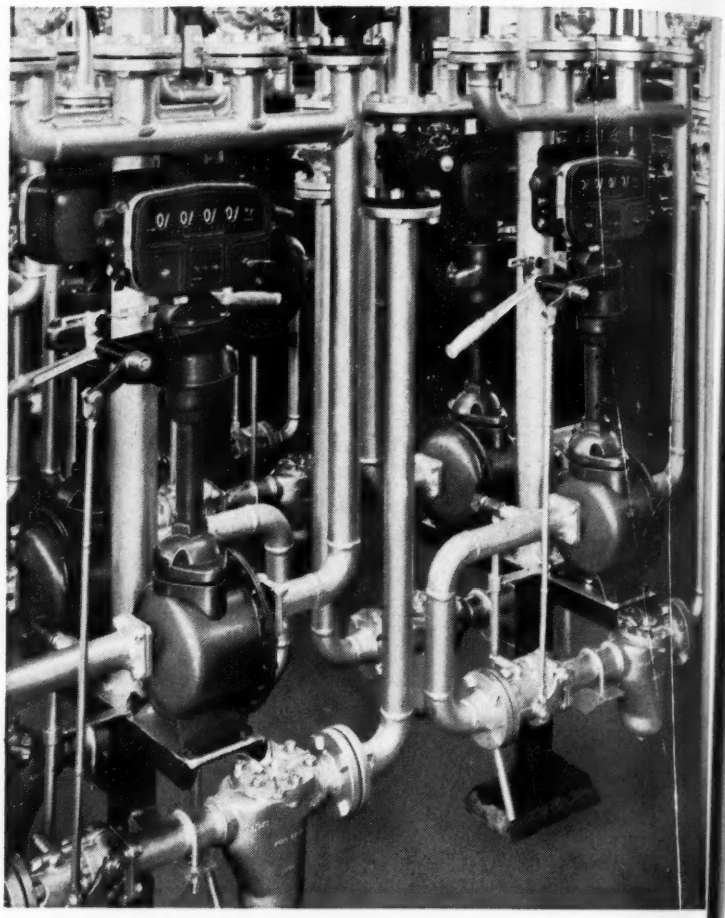


Annual fueloil management Studies

Metered

BLENDING of Petroleum Products



Typical section of multiple blending installation, showing Brodie *BiRotor* Meters with counter-printers and extensions, slow closing Quantrol Valves, and strainer accessory equipment. Meters are manifolded into a common header.

—provides fully automatic flow-line proportioning

Brodie Slow-Closing Quantrol insures shock-free shutoff.

In high-speed blending operations, Brodie *BiRotor* Meters replace slow, cumbersome manual methods. Installation permits space-saving compactness with less piping. Blending time is materially reduced by simultaneous automatic pre-set measurement of base stocks and additives. Automatic counter-printers provide permanent accurate records of exact volume of ingredients in each formulated production run. For fast accurate automatic blending, investigate Brodie *BiRotor* Meters today.

ALL-STEEL BiRotor TRUE-ROTARY

BRODIE METERS

RALPH N. BRODIE COMPANY · San Leandro, California, U.S.A.

MT. VERNON, N. Y.	DALLAS 2, TEXAS	CHICAGO OFFICE:	SEATTLE 9, WASH.	LOS ANGELES 22, CALIF.
550 So. Columbus Ave.	167 Parkhouse St.	1227 Circle Ave., Forest Park, Ill.	221 9th Ave. N.	5401 E. Sheila Street

REPRESENTATIVES WITH STOCKS AND SERVICE FACILITIES IN ALL PRINCIPAL CITIES

SEPTEMBER fueloil & oilheat 1956

VOLUME 15 NUMBER 9

Publication and Editorial Office: 2 West 45th St., New York 36, N. Y.

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Among other things . . .

The cover picture this month might be called "Cracking Still on Broadway" except it isn't quite that. Not many folks know that Socony Mobil Oil Co. has a refinery in New York City so situated that this catalytic cracking unit shares the evening skyline with the RCA Building on the right and the big glass eastern face of the United Nations Building in the center. Actually this refinery, the oldest in America, is in the Greenpoint section of Brooklyn. There's an invisible river between it and the Manhattan skyscrapers.

The special nature of the issue this month makes it worth keeping in the head man's desk, for it has a lot of good operating figures that can be useful to compare with your own. Then Bob Thulman's criticism of "B" flues is a must.

bigger filter in PREMIER furnace cleaners doesn't need cleaning before the can is full

In furnace cleaning, it's not the size of the can; it's the efficiency of the filter* that counts. Now, for the first time, a full ½ bushel-capacity cleaner! You can do a perfect job and never have to worry about lugging cleaning equipment around. Notice that this machine is only ½ the size of ordinary cleaners.

PREMIER'S giant pleated filter has 3 times more working filtering area than other makes. This means you don't have to clean the filter so often either. 2 out of 3 filter-cleaning interruptions are avoided. Jobs go faster. You make more profit per job.

"OLD RELIABLE"—famous Premier furnace and air conditioning cleaner (P-908F) now also available with this new auxiliary filter. For information on *all* Premier furnace and air conditioning cleaners, write today for Folder FB14.

For complete information, write today to . . .

***Patent applied for.**

PREMIER

PREMIER COMPANY
Dept. 505
755 Woodlawn Ave., St. Paul 1, Minnesota
35 Gerrard St. West, Toronto, Canada

Names in the News

C. T. "Cy" *Burg,* vice-president, Iron Fireman Mfg. Co., Cleveland, died August 1 after several months of illness. He was in charge of Iron Fireman sales since the company was organized in Portland, Ore., in 1923 and, in 1946, he became a vice-president. Burg was well-known throughout the country as a colorful and dynamic speaker and was an active member of several heating associations, including Oil-Heating Institute of America, where he was a vice-president and member of the board of directors. A native of Seattle, he moved to Cleveland in 1932 a few years after Iron Fireman began manufacturing operations there. Surviving are a wife, a son, a daughter and a brother.

Harold E. Chapler, 60, veteran salesman in Minneapolis-Honeywell Regulator Company's heating division, died July 26 in Los Angeles. He had been with the firm for more than 30 years and was sales manager of the oil equipment controls division from 1945 until 1951 when ill health forced his partial retirement. After moving to California he continued to handle specialized sales work in the residential controls field.

Born in Wabash, Ind., Chapler joined the Honeywell Heating Specialties Co. there in 1925 and two years later transferred to Minneapolis when the firm became part of Minneapolis-Honeywell. In 1929 he moved to Boston to be in charge of heating controls sales for New England and in the 1930's he handled Honeywell oilheating accounts in that area, New York and Pennsylvania, making his headquarters for a number of years in the New York office. After special defense work in the Industrial Division during World War II, he returned to the heating controls division. Active in heating and airconditioning trade organizations, Chapler was made an honorary life member of OHI in 1951. Surviving are his widow, Ardis, and a son, Jack, of Indianapolis.

Carl W. Millsom, Jr., has been appointed vice-president of airconditioning heating and appliance sales; *Donald G. Wright* has been appointed general sales manager, contract sales for Perfection Industries, Div. of

Wright

Millsom

Hupp Corp., Cleveland 4, Ohio. Millsom since 1950 had been vice-president of sales, Acme Industries, Jackson, Mich., airconditioning manufacturers, and before that served as vice-president and general manager, Temperature Eqpt. Corp., Cleveland, and in sales capacities for Airtemp. Wright, who was general manager of Globe Stamping and Refrigeration Products, another Hupp Division from 1953 to 1955, previously had been vice-president in charge of manufacturing for the Chrysler Div. of Chrysler Corp.

William S. Sutherland has become manager of advertising and sales promotion, Mueller Climatrol Corp., Milwaukee, Wis. Sutherland had been as-

how PREMIER furnace cleaners cut your labor-time costs

Labor-time takes 90% of your maintenance cleaning costs. PREMIER saves you money because it reduces that time. Here's how:

1 You spend less time on each job because of special pleated filter design. The filters in PREMIER machines are 3 times larger than others . . . 3 times more working-filter area than other makes. This saves time . . . boosts profit of each job. Notice this machine is half the size of ordinary cleaners, yet holds a full half bushel.

2 PREMIER equipment is practically maintenance-free because their special built motors are well ventilated to run cooler. Extra air flow over the motor is possible also by the exclusive "3-times larger" filter. This means longer motor life.

3 All models are completely equipped with standard attachments. Special tools for out-of-the-ordinary jobs are also available.

PREMIER YOUR BEST BUY

4 Low initial cost due to high volume of sales. Fine engineering design born of years of experience have made PREMIER machines the preference of cleaning men.

5 Listed by Underwriters' Laboratories and Canadian Standard Ass'n.

"OLD RELIABLE"—first and most famous Premier furnace and air-conditioning cleaner (P-908F) with external filter bag for "hot jobs" now also is available with new 3-times-larger internal filter. For information on *all* Premier furnace and air conditioning cleaners, write today for Folder FB14.

PREMIER

PREMIER COMPANY
Dept. 506
755 Woodlawn Ave., St. Paul 1, Minnesota
35 Gerrard St. West, Toronto, Canada

"No need to turn back
with a Never-Clog Vac"

you're IN . . . and out fast with a dependable

PULLMAN
NEVER-CLOG®
VACUUM CLEANER

Every job's an easy job when you use the Pullman Never-Clog, the one vacuum specially designed for furnace cleaning . . . the one vacuum with the famous Never-Clog filter bag, a permanent secondary filter that always maintains full suction . . . even on tough jobs where soot, scale, ash and debris would knock out an ordinary vac. The Pullman Never-Clog is *guaranteed* for full time operation and it's completely portable.

MAKE MORE CALLS . . . MORE SALES . . . MORE PROFITS per day with the one vacuum cleaner that *never clogs*. Your customers will be "sold on you" when you serve them fast and efficiently with a Never-Clog Vac . . . and a "sold on you" customer is a perfect prospect for MORE *fuel oil sales*, MORE *worthwhile repair* jobs and *new installations*.

STANDARD EQUIPMENT
- Never-Clog filter bag.
- 27" metal crevice tool.
- Power blower nozzle.
- Handy scraper tool.
- Flexible metal asbestos packed hose.
- 10' x 1½ I. D. heavy duty hose.

Pullman
THE WORLD'S LEADING SPECIALISTS IN FURNACE VACUUM CLEANERS

PULLMAN
VACUUM CLEANER
CORP.
25 BUICK ST.
BOSTON 15, MASS.

sistant advertising manager and succeeds John Reock, who has joined Keeney Publishing Co., Chicago.

Louis G. Shenk, Jr., who joined American Standard in 1949, has been appointed manager of boiler and radiator products, Plumbing and Heating Division. Shenk has been serving as acting manager of boiler and radiator products since February. He held various sales assignments in the New York City area, later being appointed assistant to Harold C. Day, manager of heating-cooling products.

Renne G. Rankin has been named field sales manager for the Blend-Air heating and airconditioning division, Coleman Co., Inc., Wichita, Kan.,

Rankin

Simmons

succeeding *Hascal Simmons*, who has been appointed manager of the Kansas City, Mo., branch sales office. Rankin has had sales experience with General Motors and the Packard Co. Before joining Coleman, he was district sales manager of Servel Corp. Simmons joined Coleman in 1948 as regional sales representative and has since held positions of sales engineer, regional sales manager and divisional field sales manager.

George Sharkey, has been named Airtemp West Coast assistant regional manager succeeding L. D. Brosell, who resigned. Sharkey has been associated with Airtemp and the company's West Coast sales activities since 1950. He has held district representative and district manager sales posts.

INSURE Next Year's Cooling Profits NOW!

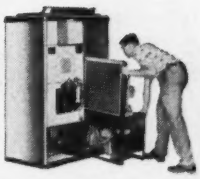
WITH

Luxaire®

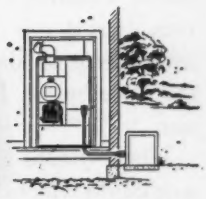
YEAR' ROUND AIR CONDITIONERS

2, 3, or 5 Ton Water Cooled Refrigeration Circuit

2 or 3 Ton Waterless Refrigeration System

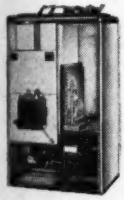


Complete Water Cooled Refrigerant System readily slides within cooling compartment of furnace cabinet.

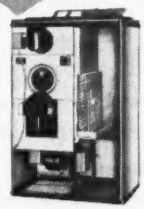


Cooling Coil of Waterless Refrigerant System is installed in furnace cabinet. Weatherproof Condensing Unit is installed outdoors.

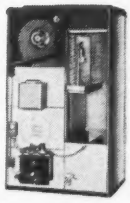
Burns Either Gas or Oil . . . Convert at Anytime



2 or 3 Ton Basement-Utility (Upflow) Unit with Gas Burner and Water Cooled Refrigerant Circuit.

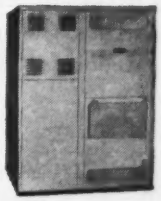


2 or 3 Ton Basement-Utility Unit with Oil Burner and Cooling Coil of Waterless Refrigerant System.



2 or 3 Ton Counterflow Unit with Gas Burner and Cooling Coil of Waterless Refrigerant System.

2 or 3 Ton Counterflow Unit with Oil Burner and Water Cooled Refrigerant Circuit.



5 Ton Water Cooled Unit burns either Gas or Oil.

It occupies less floor space than many standard furnaces. It is available in either Basement-Utility (Upflow) or Counterflow models. And for heating only, the Luxaire Year 'Round Air Conditioner costs little more than a good forced air furnace.

Complete with Cooling System, the Luxaire Year 'Round Air Conditioner costs less than most forced air furnaces, plus an added cooling unit.

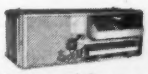
Compare these other advantages. The Luxaire Year 'Round Air Conditioner is engineered at the factory, not at the installation site. Heating and cooling are balanced, and both are supplied from the same compact cabinet, with only one set of discharge and return air connections.

You can make an extra profit now, by installing the Luxaire Year 'Round Air Conditioner for heating only, now. You will thereby insure an additional profit from installing the cooling system next spring. And when you do, you will save your customer both money and inconvenience.

See your Luxaire jobber about Luxaire Year 'Round Air Conditioners today!

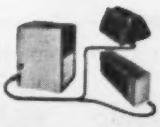
Basement Type Winter Air Conditioners Burn either Gas or Oil

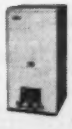
Counterflow or Utility Winter Air Conditioners Burn either Gas or Oil



Horizontal Furnaces 4 Oil Fired, 4 Gas Fired Models

2, 3 and 5 Ton Waterless Add-On Summer Air Conditioners — Air Cooled Condensing Units with matching A-type or Duct-type Cooling Coils.





Gravity Furnaces Burn either Gas or Oil

Gas Fired Unit Heaters

THE C. A. OLSEN MANUFACTURING COMPANY . . ELYRIA, OHIO

Luxaire HEATING & AIR CONDITIONING UNITS

OUR SUGGESTION in the August issue that it might be sensible to put oilheating slogans on bulkplant tanks appears to have struck pay dirt. There has been considerable correspondence on this subject during the month, and some companies have stated definitely that they will do it.

Our friend, Will Parker, from the North Carolina Oil Jobbers Association carried our recommendation in his bulletin as did Hiff Horning of the Northwest Petroleum Association.

Lionel Jacobs has sent in another suggestion which he visualizes

OIL HEAT FOR FREEDOM—
Freedom from cold
Freedom from high fuel bills
Freedom from suffocation
Freedom from labor
Freedom from anxiety
Freedom from monopoly
Freedom from dirt, dust and ashes.

❖

THE OILHEATING INDUSTRY in the Pacific Northwest is always interesting if for no other reason than the novelty of some of the projects that their imaginative operators undertake. We have often written articles along those lines.

Just now we're all thinking about the potential competition from the new natural gas lines coming in to Washington and Oregon. At the same time, the oil industry is stepping out with a lot of new refinery capacity designed mostly to utilize Canadian crude oil. This was highlighted with the announcement last month that Standard Oil Co. of California will build a 60,000 barrel refinery on Puget Sound.

This will bring the refinery capacity of the state of Washington up to 160,000 barrels a day through the recent or early completion of three other refineries. Those are General Petroleum at Ferndale with 35 MBD, Shell's new Anacortes plant with 50 MBD, and U.S. Oil and Refining Company's new 15 MBD at Tacoma. As a coincidence the state of Washington last year consumed just 160 MBD. Now it seems that the Texas Company and Richfield Oil expect to announce shortly that they will build new refineries in the area.

Then we must consider that the region has enormous water power resources. It looks like Washington and Oregon will soon be having a great surplus of energy needing a home.

As a guess there are better investments to be found than the stock or bonds of the gas pipeline.

❖

AN OHIO manufacturer now has put on the market a new central entertainment system for the home that distributes sound from a record player, television or radio through the heating ducts of a home. The general idea is that the little lady can catch the soap opera without interruption as she works from room to room.

Not only that, says the manufacturer, but she will require no knowledge of electronics to install the unit. No special tools or skill are needed, but only $37.50 and that includes the manufacturer's guarantee.

Off hand — it's a horrible idea, even if the ducts were insulated against vibration or similar plagues. How could anyone escape Mickey Mouse, Dragnet or the third game of the Dodger series—not to mention the possibility of all three at once.

❖

ACCORDING TO "*Media Records for 1955*," and covering newspaper advertising only, eight major oil companies spent $201,210 advertising fueloil, and $11,234,442 advertising gasoline.

Considering that fueloil is at least as profitable per gallon in today's markets as gasoline, and that nearly half as many gallons of fueloil are sold, it would look like more promotion is in order. One interesting thought comes out of these figures. The eight major companies listed are all participating in support of programs identified with Oilheating Market Reports, and they are investing more money in these local co-operative campaigns than media records shows for their own total newspaper advertising on fueloil.

❖

NEWSPAPER CLIPPINGS have come in from several industry friends showing that the Northern Illinois Gas Co. has approval from the Illinois Commerce Commission for its new dual-fuel plan. The company reported that it has 160,000 potential heating customers on a waiting list, and it is not able to add additional load.

In theory these customers would voluntarily install heating equipment which automatically switches from natural gas to propane or oil when the temperature reaches a predetermined point. We hope that the propane people are willing to take them on because oil men don't want that kind of business. The idea has been tried for years, but according to available statistics there are not more than 3,500 such residential installations operating in the nation.

Oil men don't like them because they add a short winter peak on top of an existing peak. Gas men with experience don't like them because if anything goes wrong or needs adjusting the customer always looks to the gas company even though the service problem may involve only the oilheating phase.

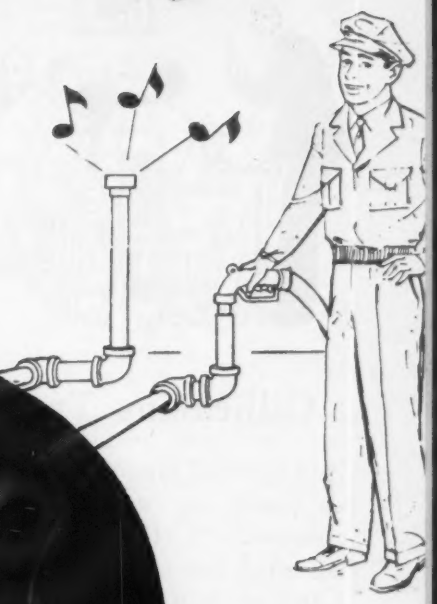
Dual fuel equipment in large commercial and industrial installations has been in fairly wide use for many years, and is practical within certain limits in that field. But at the residential level the fueloil industry should resist this activity at every opportunity.

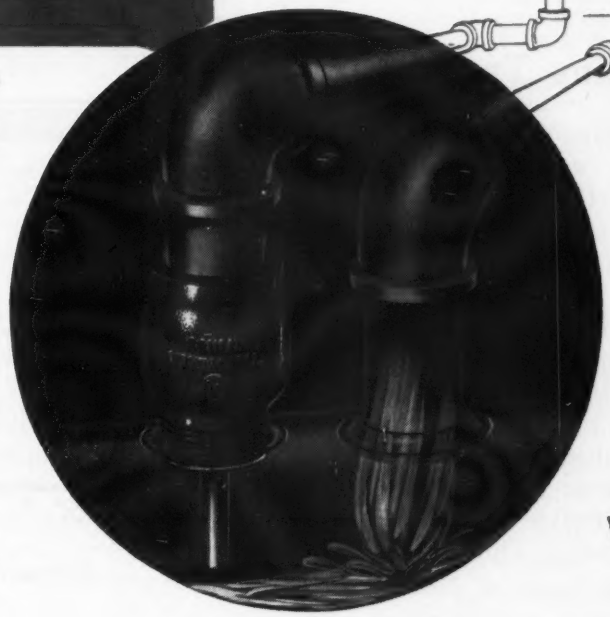
❖

UNDER THE HEADING "Persistency Pays Off," the house organ of the Heil Company, Milwaukee, reveals these most interesting and significant statistics from a recent survey report: 80% of all sales are made after the fifth call; 48% of salesmen call once and quit; 25% call twice and give up; 12% make three calls and stop; 10% keep on calling. This 10% makes 80% of the sales!

There is only One Whistling Tank Fill Signal

which is part of a whole family of Fuel Oil Delivery Aids





VENTALARM®

Original and Dependable WHISTLING TANK FILL SIGNAL

The Signal that saves up to 30% of delivery costs.

Installed on over 4,000,000 home fuel oil tanks by 4500 major and independent fuel oil dealers.

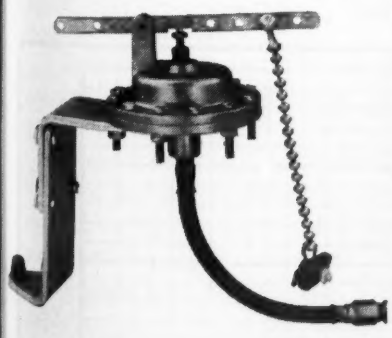
"BUILT-IN WHISTLE PROTECTION"

A NEW Feature, built into all models of VENTALARM Signal, is a screen over the entire whistle top. Prevents bugs, pipe scale, or other foreign matter from entering the whistle and muffling the sound.

VENTALARM GAUGE

You can have a combination VENTALARM Signal and GAUGE in one unit for new installations!

"Just Fill 'til the Whistle Stops"



Scully Throtlator®

Automatically controls fuel oil pumping speed. Ends hand throttle adjustment and needless racing of truck motor and pump. Automatically adjusts engine speed to proper RPM for maximum pump efficiency when power take-off is engaged. Only 4" square; easily installed under the engine hood near the carburetor.

Scully® Swivel Connector

Guarantees easy positioning of nozzle without hose twist. Exclusive safety retention sleeve holds swivel parts firmly in place. Ball bearing action assures smooth turning even under full hose pressure.

Scully® Nozzle

Engineered for modern fuel oil delivery. Provides for full-flow discharge rates. Allows infinite adjustment of flow rate. Cut-off is clean; surge eliminated. Only half the weight of a conventional nozzle to handle. Has built-in check valve.

Contact your Regular Supply House

Scully Products are manufactured under U. S. and Foreign Patents or Patents Pending.

MEMBER OHI

SCULLY SIGNAL COMPANY

174 Green Street, Melrose 76, Mass.

Canadian Branch: Scully Signal Ltd., 286 King St. W., Toronto, Ontario.

©1956 BY SCULLY SIGNAL CO.

Oilheating Trends

JULY INSTALLATIONS of domestic oilheating are estimated at 62,089 compared to 71,518 in the corresponding month last year. This represents a drop of about 13%.

For the first seven months of the year we estimate that installations were 331,571 and this is a little more than 8% below last year's 361,521 for the same period.

The July installations were divided: New Homes, 16,060; Replacements of old oilburners, 10,358; and Conversions from other fuels, 35,671.

Burner Stocks: Stocks of domestic burners and units in dealer hands at the end of July were approximately 124,011. A year ago on the same date there were 139,759. The current stocks were divided: Separate Burners, 59,785; Boiler-Burner Units, 21,117 and Furnace Burner units, 43,109.

Factory stocks on May 31, the latest available date were 82,696 compared with 71,794 a year earlier. These factory stock figures can be misleading. They are accumulated by the Census Bureau from only those factories whose principal business is oilheating equipment. If on the other hand, a furnace or boiler manufacturer has bought the separate burners and incorporated them into his products he may have a lot of these units on hand, but they are never included in these stock figures. That factor is responsible for some of the gap between factory shipments and our estimates of installations. Factory shipments this year have shown a much stronger drop than have field installation.

Tank Stocks: Customer tanks in dealer hands at the end of July were approximately 84,178. This compares with 62,580 at the end of June and with only 46,271 at the end of July last year. It is pretty obvious that dealers were alerted by the steel strike to lay in a supply of tanks in advance.

There already has been a small change. The average price paid by dealers during July for a 275 gal. tank was $32, compared with $31 in June. Steel represents a large part of the cost of a tank, so we can reasonably expect some more increases.

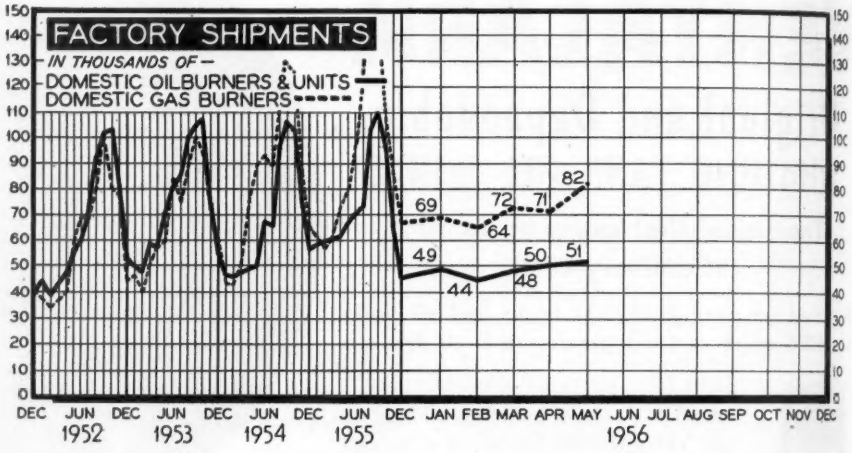
The current tank stock sizes show: 220-275 gal., 74,786; sizes 550 to 675 gal., 5,898; and sizes 1,000 gal. or larger, 3,495.

Minimum Retail Prices of Key Dealers

	July Aver.	*June Aver.*
Separate Burners	$310	$311
Boiler-Burners	720	722
Furnace-Burners	594	597

Price Index: Separate Burners 1947-49 is 100%

	WHOLESALE		
July	94.0	Six months ago	95.5
June	93.5	Year ago	92.9
	RETAIL		
July	91.8	Six months ago	94.4
June	92.1	Year ago	93.4

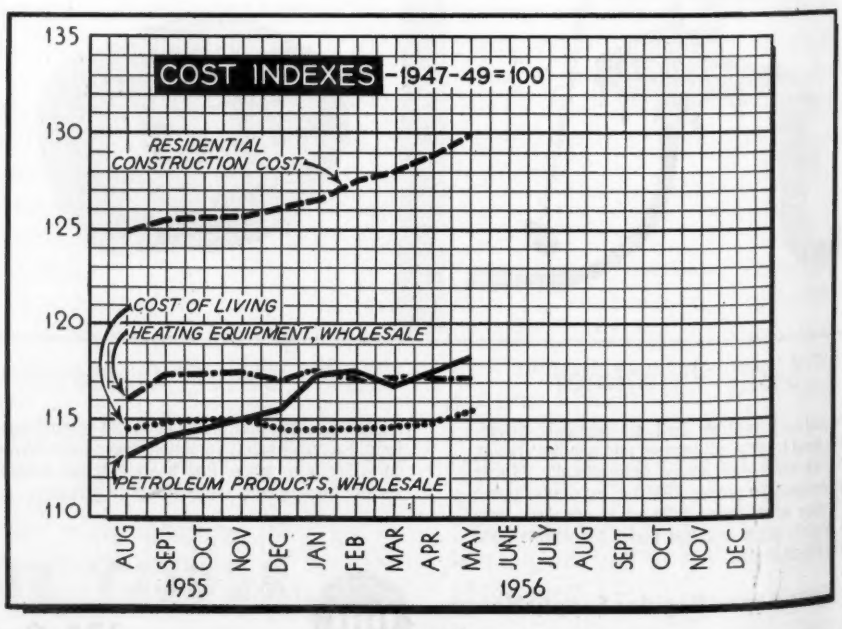


Shipments of Oilburners and Units

(Including Exports)

Adjusted to include manufacturers other than the 145 reporting to Census Bureau, FUELOIL & OIL HEAT'S estimates of shipments are:

	MAY			FIVE MONTHS		
	1956	*1955*	*Percent Change*	*1956*	*1955*	*Percent Change*
Separate Burners	33,348	41,784	— 20.2	159,311	205,161	— 22.3
Boiler Units	3,923	6,313	— 37.9	21,362	26,874	— 20.5
Furnace Units	13,677	17,553	— 22.1	62,067	70,613	— 12.1
All Domestic	50,948	65,650	— 22.4	242,740	302,648	— 19.8
Commercial	3,419	3,039	+ 12.5	14,928	13,089	+ 14.0
Total	54,367	68,689	— 20.9	257,668	315,737	— 18.4


COST INDEXES -1947-49=100
RESIDENTIAL CONSTRUCTION COST
COST OF LIVING
HEATING EQUIPMENT, WHOLESALE
PETROLEUM PRODUCTS, WHOLESALE
AUG SEPT OCT NOV DEC JAN FEB MAR APR MAY JUNE JULY AUG SEPT OCT NOV DEC
1955 1956

Performance Standards: From time to time we have questions from fueloil and oilheating dealers asking what is the appropriate work load for various types of employees.

We started the special questions this month by asking how many gallons a truck driver will deliver in an eight hour day and then in a ten hour day. Then it occurred to us to ask what size truck this man is using. Here are the results:

Truck Size	AVERAGE GALS. DELIVERED *8-hour*	*10-hour*
1,000-1,499	4,747	5,761
1,500-2,499	4,919	6,319
2,500 or over	5,568	7,995

These figures certainly highlight the advantages in using larger trucks, particularly where wage rates are high. When the fueloil man goes from an eight hour day to a ten hour day, he's actually adding 25% to the weekly hours.

If he's using the smallest of the three truck sizes shown in the table he gains only 21% in gallons delivered. If he's using the middle sized group of trucks, the output is increased 28%. When we come to the largest sized group of trucks, the increase of eight to ten hours raises the output 44%.

This would seem incredible if not based on quite a good number of companies.

With these large trucks, it looks like they are limited to delivering two loads in an eight hour day, but with ten hours they go to three loads. The driver wage for the extra two hours would certainly be at the increased rate where the medium to larger truck sizes are involved. There's some question about it on the smaller sizes.

For the extra two hours, the driver will get on the average close to $6 if it's a time and a half basis. In the middle-sized truck group he'll be delivering 1,400 additional gallons of oil with a gross billing just under $200.

Next we asked the oilmen if their drivers have any special incentive for high output. We find that just about one-fourth of the companies have an incentive, and these were just about evenly divided through the geographic sections of the country.

The answers on this question may have been a little confused because some of the distributors in describing the incentive mention that they pay time and a half for the extra hours. Other companies sometimes pay a fraction of a cent a gallon above a delivery standard which might be 4,500 gallons.

How many customer accounts make a typical work load for one bookkeeper? If we base the answer on the experience of all reporting companies it would be an average of 1,743. However, this includes quite a number of companies that do not use bookkeeping machines other than adding machines or calculators.

When we asked what make of machine they used we found four brands representing 82% of all used. These are the brands listed alphabetically: Burroughs, National Cash Register, Remington, and Underwood-Sundstrand. Where any of those four brands of automatic bookkeeping machines are in use the average bookkeeper takes care of 2,024 accounts.

We found that 57% of the fueloil companies in the reporting group make use of one or more of the bookkeeping machines mentioned.

Our next question had to do with degree-day operators or dispatchers. One such operator handles, on the average, 1,778 customer accounts. Naturally, this is not the maximum he can handle because some companies go as high as 10,000 accounts for the straight degree-day operator. Several companies run above 3,000 on the average.

One burner serviceman looks after 476 oilheating customers among the typical companies in this survey. Back in the May issue where we had our annual roundup of service department statistics we found the average to be 517 customers per man. That study was based on a much larger group of companies than we are working with here. Also it was a little more exacting in keeping out the combination serviceman-installation man.

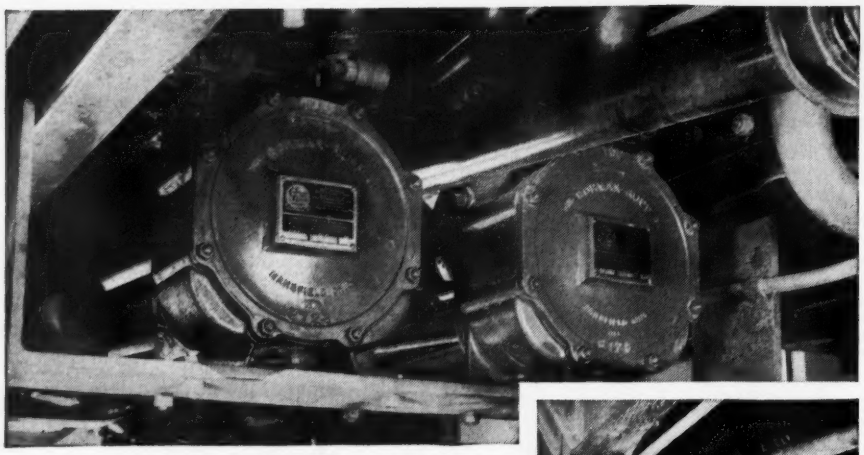
Our next investigation in this present study sought to determine how many man hours are typically used to install a new oilburner in an old boiler or furnace . . . in other words the typical conversion installation. The composite figure on this is 18 hours, although the range was from a low

Oilheating Permits*

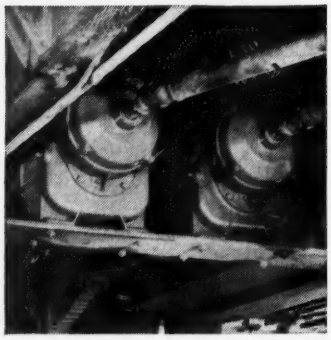
JULY *1956*		7 MONTHS *1955*	*1956*
5	Albany, N. Y.	46	24
44	Baltimore, Md.	245	259
116	Bridgeport, Conn.	689	579
..	Columbus, O.	189	..
90	Detroit, Mich.	..	848
61	Elizabeth, N. J.	177	417
14	Freeport, N. Y.	241	186
..	Hartford, Conn.	405	..
48	Irvington, N. J.	175	206
59	Meriden, Conn.	227	311
..	Milwaukee, Wis.	2975	..
6	Minneapolis, Minn.	111	87
15	Montclair, N. J.	99	74
..	Morristown, N. J.	37	..
21	Mt. Vernon, N. Y.	173	132
134	Newark, N. J.	656	594
41	New Bedford, Mass.	497	604
38	New Haven, Conn.	153	134
24	New Rochelle, N. Y.	192	125
25	Norfolk, Va.	187	305
..	Omaha, Neb.	31	..
21	Orange, N. J.	70	71
11	Passaic, N. J.	57	49
36	Paterson, N. J.	250	227
165	Philadelphia, Pa.**	1819	1398
53	Portland, Me.	320	..
262	Portland, Oreg.	2229	1785
13	Poughkeepsie, N. Y.	102	80
..	Providence, R. I.	450	..
23	Richmond, Va.	219	244
101	Roanoke, Va.	581	596
112	Rochester, N. Y.	683	505
15	Rockville Centre, N. Y.	86	72
29	Salem, Mass.	206	247
185	St. Louis, Mo.	919	1095
2	St. Paul, Minn.	56	43
20	Schenectady, N. Y.	72	..
..	Spokane, Wash.	890	..
144	Springfield, Mass.	761	694
23	Stamford, Conn.	182	168
41	Washington, D. C.	297	257
15	White Plains, N. Y.	133	108
22	Wilmington, Del.	219	..
..	Worcester, Mass.	610	..
25	Yonkers, N. Y.	263	..
1976	Totals	12518	11676
	Percent Change		—6.7

*Permits are not total sales in each market since none are reported from suburban areas, which normally account for 20% to 60% of total sales in each market; nor are they an accurate index where enforcement is lax. Rightly used, however, they are a useful working index.

**Courtesy of "Philadelphia Inquirer."



Twin installation of Models 01½A-GL and 01½A-GR mounted on rack under tank on truck of James W. Tolbert, Waukesha, Pure Oil jobber.



Dual 59% PTO drives both units from 1956 Chevrolet truck engine.

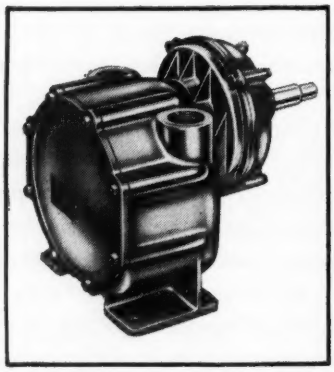
GORMAN-RUPP *CENTRIFUGAL PUMPS THAT PRIME* INSURE

Faster Deliveries!
Surer Performance!

WAUKESHA DEALER'S TRUCK DUAL-EQUIPPED WITH PTO UNITS

Time is of the essence in delivery of petroleum products. One extra truck trip per day can mean a large difference in profits. And equipment breakdowns can prove costly.

That is why so many are turning to Gorman-Rupp *Centrifugal Pumps That Prime*. These small, light weight pumps get the petroleum products delivered with top speed . . . and without loss of pay load caused by excess dead weight. Sturdily built, their design is simple. Owners are impressed with their trouble-free dependability. Sure, positive priming. Safer—no check valve.



These 1½" x 1½" pumps weigh only 32 lbs. each.

Gorman-Rupp PUMPS UNSURPASSED FOR PUMPING FAST

Ask your Gorman-Rupp Distributor for a demonstration

THE GORMAN-RUPP COMPANY
305 BOWMAN STREET • MANSFIELD, OHIO

point of 8 hours to a high of 40 hours. The average figure of 18 hours covers a pair of men doing the job in a day, and most likely they would be handling a high pressure gun burner with a 275 gal. basement tank.

When we get the dealer reporting an installation in eight hours we find them pretty much in one section of the country so it may be common practice not to complete the whole job. It is in a strong union area so the electrical work may be done by outsiders.

The typical oilheating salesman accounts for 59 jobs in a year, if we use the average of all the reporting companies this month. There's a wide variation here. The low point is 12 jobs and the high is 175. In one case it's obviously a part time situation, and the high man is obviously getting builder business.

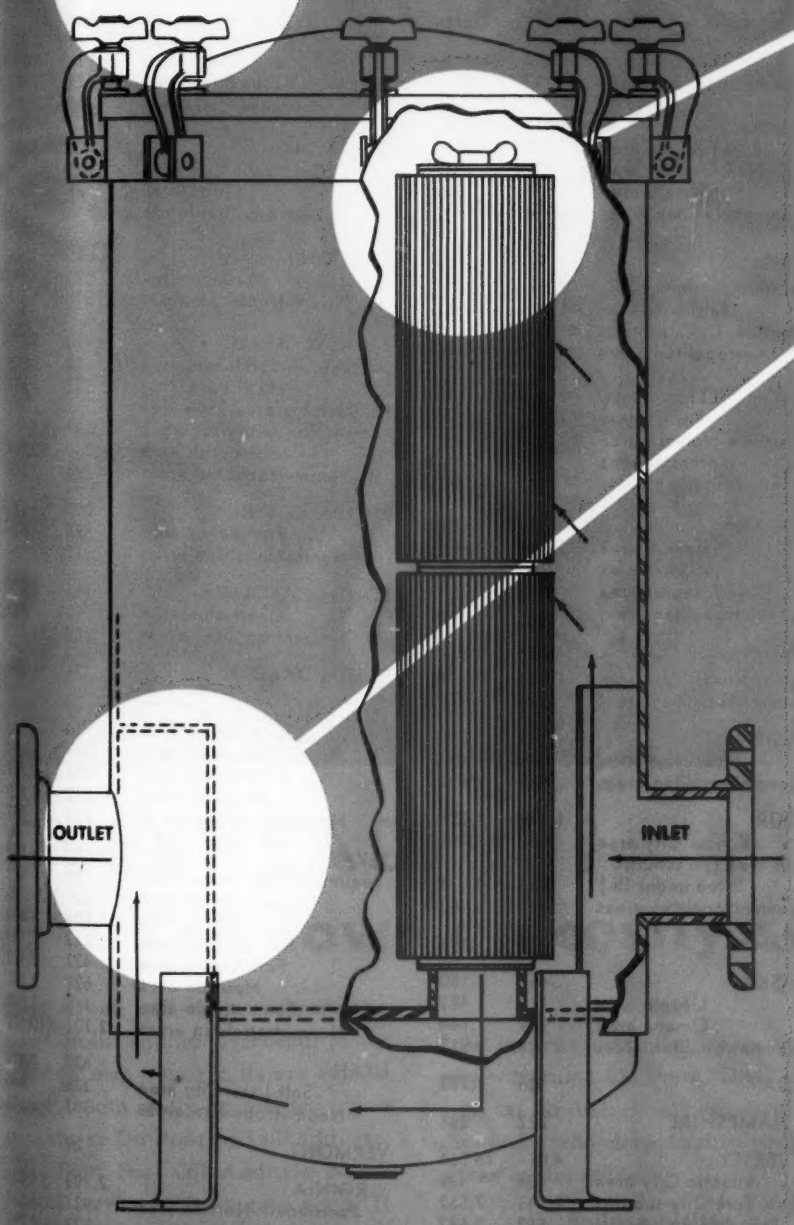
The final point in this study of performance standards covered the fueloil salesman. We learn that on the average he is responsible for keeping in line 1,094 fueloil customers. We did not ask how many new ones he should add in a year because that would be a different kind of study wherein he might overlap the oilheating equipment salesman. One company expects its fueloil salesmen to look after 4,000 customers each, while the lowest figure for a company of any size was one man to each 500 customers.

Naturally in all of these yardsticks there are special circumstances affecting each company, but the fueloil distributor doing better than the average of these several measurements should be making better than average profits.

Typical of the comments this month are these: "Our total number of accounts is only 700 so both our bookkeeper and degree-day operator could probably handle twice as many if we had them." . . . "Union will not allow us to have an incentive plan—someone might work."

"We don't have salesmen; we give the best service in our area and add about 100 new accounts a year through old customer recommendations." . . . "Manpower, not customers, is still in short supply." . . . "Our extra incentive is simply that we pay full time when sick, guarantee full employment, pay better than average wage." . . .

NOW! In ONE Filter



Easy Servicing

Just a twist of the wrist and the top swings open. No special tools needed; eliminates nuts and bolts; no busted knuckles.

Best Performance

PETROLEUM MARKETING FACILITIES: truck loading racks, aircraft fueling, fuel oil bulk plants.

MACHINE TOOLS: coolants and cutting oils, hydraulic oils.

INDUSTRIAL PLANTS: solvents, oils, water and other non-corrosive fluids.

WITH THE

New Excel-So

57 SERIES FILTERS

Check these advantages • Simplified construction—low initial cost • Reduced size for compact installation • Quick opening cover and provision for instantaneous cartridge change • Improved filtration efficiency and greater dirt holding capacity . . . result . . . low cost maintenance • Very low initial pressure drop • Available for vertical or horizontal installation • Location of inlet and outlet connections to customer specifications • Wide range of product applications • Units in standard design or for code requirements • Non-ferrous construction available • Extra accessories including air eliminator, pressure gage, dump valve, etc., available.

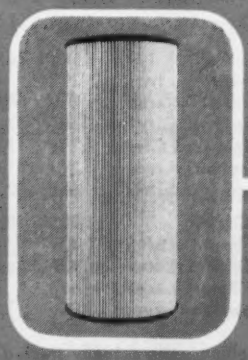
WARNER LEWIS COMPANY

BOX 3096 • TULSA, OKLAHOMA

DIVISION OF FRAM CORPORATION

Representatives in all major cities

In Canada: FRAM CANADA LTD., Stratford, Ontario



CH-57PL PLEATED CARTRIDGE

THE NEWLY Developed CH-57PL Cartridge combines

- Larger Outside Diameter
- Larger Inside Diameter
- Greater Height

RESULT

- More Filtration Surface
- Lower Operating Cost
- Higher Flow Rates

Write for bulletin WL-6-56

Where is the new home Market?

	No. of Permits Issued	
	May	5 Mo.
ALABAMA	1,207	4,980
Birmingham area	472	1,904
Mobile area	150	683
Montgomery area	103	622
Nonmetropolitan areas	482	1,771
ARIZONA	1,349	5,469
Phoenix area	931	3,819
Nonmetropolitan areas	418	1,650
ARKANSAS	286	1,471
CALIFORNIA	15,930	79,853
Fresno area	185	1,154
Los Angeles area	7,923	42,254
Sacramento area	448	2,060
San Bernardino area	1,719	7,133
San Diego area	1,098	5,337
San Francisco-Oakland	2,050	9,644
San Jose area	1,017	3,788
Stockton area	202	842
Nonmetropolitan areas	1,288	7,641
COLORADO	11,467	6,712
Denver area	949	4,443
Nonmetropolitan areas	518	2,269
CONNECTICUT	1,885	6,755
Bridgeport area	254	880
Hartford area	410	1,426
New Haven area	182	645
Nonmetropolitan areas	1,039	3,804
DELAWARE	171	1,264
Wilmington area	167	1,210
Nonmetropolitan areas	4	54
DISTRICT OF COLUMBIA		
Washington, D. C.	317	846
Maryland suburbs*	820	3,481
Virginia suburbs**	731	3,437
FLORIDA	4,992	24,054
Jacksonville area	532	1,719
Miami area	1,543	7,200
Orlando area	210	1,043
Tampa-St. Petersburg area	821	4,299
Nonmetropolitan areas	1,886	9,793
GEORGIA	1,734	8,077
Atlanta area	979	4,497
Columbus area	198	898
Savannah area	169	661
Nonmetropolitan areas	388	1,616
IDAHO	164	520
ILLINOIS	5,724	25,209
Chicago area (Does not include Ind. suburbs)	4,587	20,581
Moline-Rock Island area	97	353
St. Louis area	188	709
Nonmetrolopitan areas	852	3,566
INDIANA	1,782	6,822
Chicago suburbs	301	1,286
Fort Wayne area	51	222
Indianapolis area	739	2,163
South Bend area	111	465
Nonmetropolitan areas	580	2,686
IOWA	1,056	3,727
Davenport area	111	641
Cedar Rapids area	215	745
Des Moines area	123	596
Omaha suburbs	38	194
Nonmetropolitan areas	569	1,843

*Included in Maryland state total.
**Included in Virginia state total.

	No. of Permits Issued	
	May	5 Mo.
KANSAS	987	4,825
Kansas City area	318	1,495
Wichita area	302	1,189
Topeka area	96	568
Nonmetropolitan areas	271	1,573
KENTUCKY	907	3,624
Cincinnati suburbs	87	218
Louisville area	623	2,482
Nonmetropolitan areas	197	1,397
LOUISIANA	1,115	5,400
Baton Rouge area	232	914
New Orleans area	487	2,297
Shreveport area	125	718
Nonmetropolitan areas	271	1,471
MAINE	205	449
MARYLAND	2,145	10,331
Baltimore area	1,013	5,420
Washington, D. C. suburbs	820	3,481
Nonmetropolitan areas	312	1,430
MASSACHUSETTS	2,666	9,608
Boston area	1,303	4,394
Springfield-Holyoke area	347	1,104
Worcester area	129	355
Nonmetropolitan areas	887	3,755
MICHIGAN	4,256	20,536
Detroit area	2,609	13,561
Flint area	207	1,500
Grand Rapids area	265	1,069
Nonmetropolitan areas	1,175	4,406
MINNESOTA	1,872	6,048
Minneapolis-St. Paul area	1,253	4,470
Nonmetropolitan areas	619	1,578
MISSISSIPPI	188	1,150
Jackson area	62	352
Nonmetropolitan areas	128	800
MISSOURI	1,649	7,037
Kansas City area	454	1,441
St. Louis area (Ill. suburbs listed under Ill.)	884	4,136
Nonmetropolitan areas	311	1,460
MONTANA	209	633
NEBRASKA	467	2,150
Lincoln area	110	493
Omaha area	259	1,144
Nonmetropolitan areas	98	513
NEVADA	184	1,373
NEW HAMPSHIRE	222	586
NEW JERSEY	4,091	15,561
Atlantic City area	104	499
New York City suburbs	2,143	7,562
Philadelphia suburbs	562	2,687
Nonmetropolitan areas	839	4,370
NEW MEXICO	443	1,911
NEW YORK	6,259	26,611
Albany, Schenectady, Troy	225	645
Buffalo area	870	4,057
New York City†	1,557	7,107
Suburbs of New York City	2,218	11,657
Rochester area	277	1,017
Nonmetropolitan areas	655	2,128
NORTH CAROLINA	1,025	5,169
Charlotte area	149	698
Greensboro-High Point area	171	870
Raleigh area	113	557
Nonmetropolitan areas	592	3,044

†Covers dwelling units actually started.

	No. of Permits Issued	
	May	5 Mo.
NORTH DAKOTA	213	571
OHIO	5,147	19,280
Akron area	248	1,342
Cincinnati area	632	1,947
Cleveland area	1,053	4,483
Columbus area	624	2,525
Dayton area	967	2,405
Toledo area	292	1,197
Youngstown area	429	1,426
Nonmetropolitan areas	902	3,955
OKLAHOMA	692	3,258
Oklahoma City area	254	1,229
Tulsa area	126	518
Nonmetropolitan areas	312	1,511
OREGON	695	3,101
Portland area	190	1,490
Nonmetropolitan areas	505	1,611
PENNSYLVANIA	4,430	15,090
Allentown-Bethlehem area	180	909
Harrisburg area	152	537
Philadelphia area (See New Jersey for Jersey suburbs)	2,344	7,428
Pittsburgh area	1,030	3,711
Nonmetropolitan areas	724	2,505
RHODE ISLAND	290	1,133
Providence area	278	1,069
Nonmetropolitan areas	12	64
SOUTH CAROLINA	361	2,057
Charleston area	98	792
Nonmetropolitan areas	263	1,265
SOUTH DAKOTA	181	594
TENNESSEE	1,147	5,499
Chattanooga area	114	649
Knoxville area	245	1,134
Memphis area	378	1,759
Nashville area	272	1,110
Nonmetropolitan areas	138	847
TEXAS	5,190	25,544
Beaumont-Port Arthur area	154	819
Corpus Christi area	128	795
Dallas area	1,106	4,642
El Paso area	223	1,159
Fort Worth area	432	2,423
Houston area	628	3,527
San Antonio area	318	2,009
Nonmetropolitan areas	2,201	10,170
UTAH	627	2,828
Salt Lake City area	326	1,650
Nonmetropolitan areas	301	1,178
VERMONT	21	72
VIRGINIA	2,793	11,026
Portsmouth-Norfolk area	921	1,627
Richmond area	373	1,792
Washington, D. C. suburbs	731	3,437
Nonmetropolitan areas	768	3,630
WASHINGTON	1,405	6,762
Seattle area	687	6,752
Spokane area	107	822
Tacoma area	239	949
Nonmetropolitan areas	372	1,615
WEST VIRGINIA	438	1,758
Charleston area	112	493
Nonmetropolitan areas	326	1,265
WISCONSIN	2,465	9,069
Madison area	131	560
Milwaukee area	1,091	3,997
Nonmetropolitan areas	1,243	4,512
WYOMING	58	411

OVERHEAD UP?

Cut down on costly service calls!

Every service call on a contract customer means higher overhead, lower net. And many such calls are unnecessary . . . can easily be avoided by an inexpensive Du Pont fuel oil additive.

Du Pont Fuel Oil Additive No. 2 reduces service calls in two ways. It greatly reduces insoluble residue formation, and it reduces particle size in any residue that may form. Therefore clogging of lines and filters is prevented.

In addition, FOA-2 leaves no ash when it burns—hence no deposits on electrodes. Another trouble-saving action!

Low cost

Low in price and effective in minute concentrations, Du Pont FOA-2 is economical to use. For best results, it should be added to freshly prepared stocks at the refinery.

Builds profits

FOA-2 works several ways to increase profits. It not only cuts excessive service calls; it also helps keep present customers satisfied and loyal. And third, the advantages of FOA-2 are sound bases for an advertising and sales promotion campaign to attract profitable new accounts.

Let FOA-2 take the dollars out of overhead and put them on the plus side—in extra net profit for you!

DU PONT
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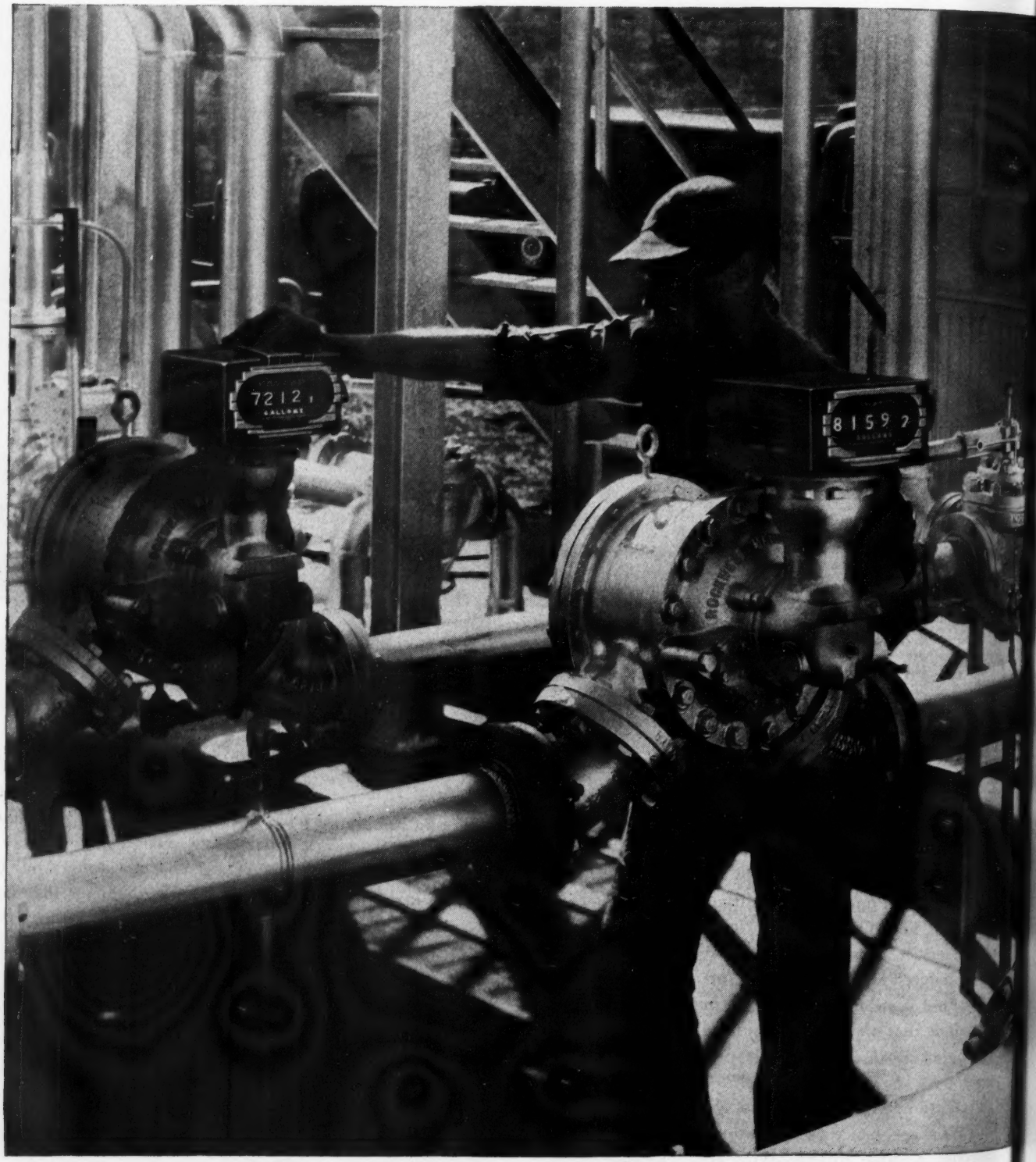
Better Things for Better Living
. . . through Chemistry

Petroleum Chemicals

E. I. DU PONT DE NEMOURS & CO. (INC.) · Petroleum Chemicals Division · Wilmington 98, Delaware

Torture Testing



RUNNING SIMULTANEOUS ENDURANCE TESTS ON ROCKWELL ROTOCYLE METE

Here two model 5-BLX Rotocycle meters installed side-by-side, are running competitively on a "round the clock" endurance test. New materials and design improvements are thus pre-tested and over-all meter performance can be chartered before production is ever started.

Meters

To Benefit You!

In the huge

ROCKWELL TEST STATION

we subject meters to every conceivable operating task, torture and abuse them to pre-prove accuracy and durability.

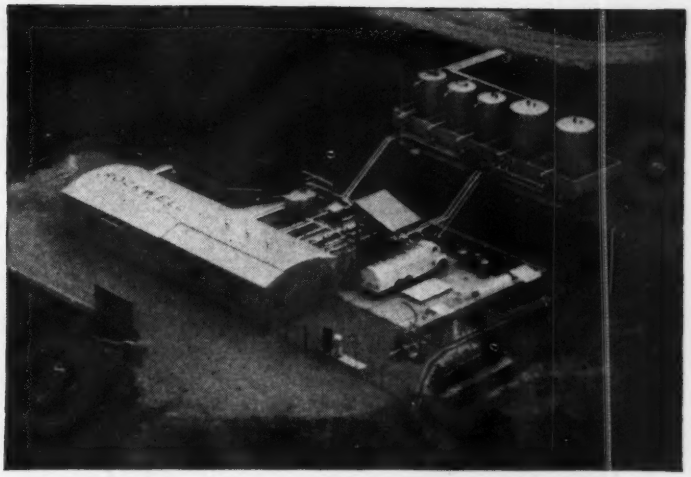
Here's Why!

Rockwell meter users benefit in many ways from our exacting testing procedures. For example, we know and you know *for sure* that the meters you order will precisely measure the liquids specified—will withstand shock-loads, temperatures and all the other variables normally encountered in field service.

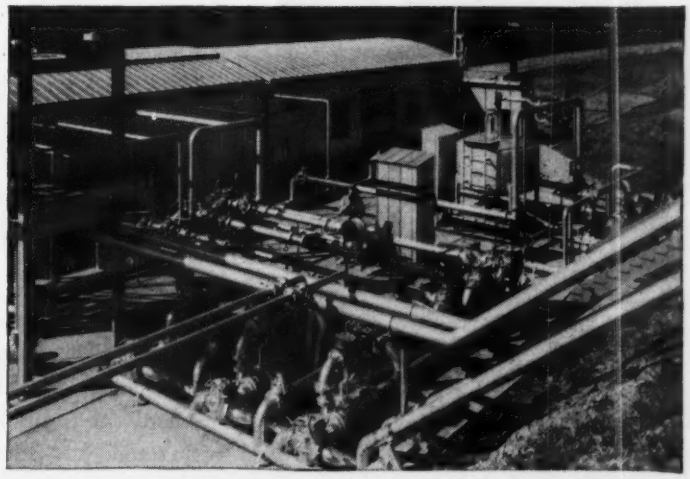
These tests also guide us in our extensive program of research and development. Planning ahead, searching for better meter designs and improved components is a never-ending process at Rockwell. It's all part of a carefully conceived program designed to either enhance the performance or add to the value that you, our customers, receive from Rockwell products.

ROCKWELL MANUFACTURING COMPANY

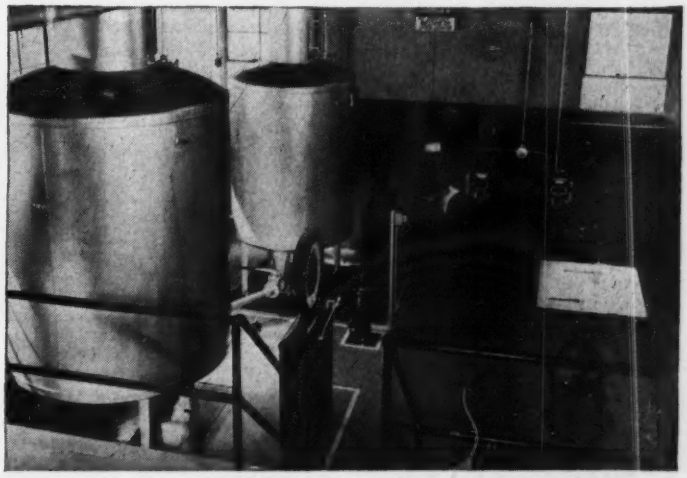
PITTSBURGH 8, PA. Atlanta Boston Charlotte Chicago Dallas Denver Houston Los Angeles Midland, Texas New Orleans New York N. Kansas City Philadelphia Pittsburgh San Francisco Seattle Shreveport Tulsa In Canada: Rockwell Manufacturing Company of Canada, Ltd., Toronto, Ontario



WORLD'S LARGEST METER TEST STATION. Aerial view of Rockwell testing station having every facility for petroleum meter proving, accounting, research and development.



AREA OF ACCURACY. View of operating area from storage tank level. In foreground are the three pumps which together permit testing meters at several thousand gallons per minute. Building in background houses indoor proving room, remote registration facilities and maintenance shop.



CONTROLLED ACCOUNTING. This indoor proving room is fitted with precisely calibrated tanks and weigh scales. Receiving registers for remote registration system are shown at right.

Rockwell *ROTOCYCLE* Meters

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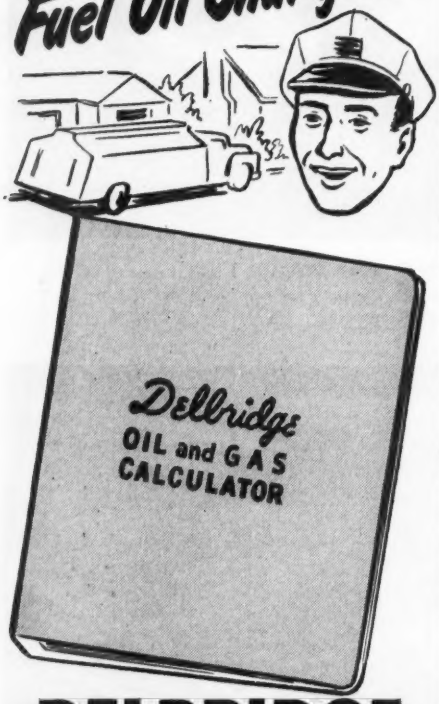

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Company.....

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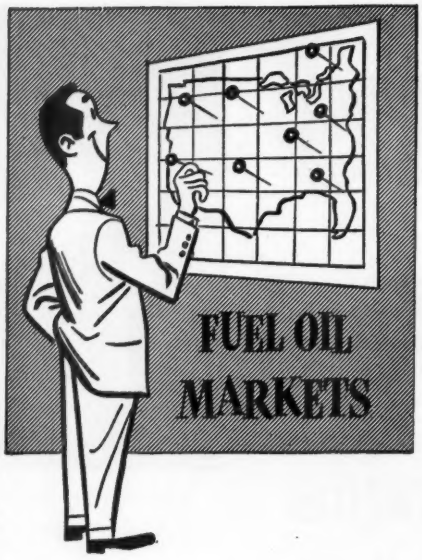

FUELOIL PRICES as of August 15, 1956 were exactly the same as those listed the preceding month. In all of the cities in our tabulation the market was stable—both wholesale and retail.

The primary stock figures collected by the American Petroleum Institute are higher this month than they were a year ago.

The Bureau of the Census no longer collects the secondary stock measurement, but indications are that distributors, particularly along the Eastern seaboard are not building stocks at a very rapid rate. The lack of summer discounts probably is responsible for the distributors moving slowly on this.

Fueloil marketers generally have not been too happy about summer discounts when they were also being passed along to consumers. But at the same time they did have one advantage in getting the price increase October 1 on whatever oil they could have on hand.

Last year, because of a weak market position the prices did not go up October 1 as expected, but stayed at the lower level for another two months. The result was that fueloil distributors, not knowing just when the rise would come missed the boat in many instances on having full storage.

This season they're paying little attention to the probably favorable economics which is why their own stocks are inclined to sag. On the other hand, if the tanker picture does not improve or if something more difficult happens at the Suez, some oilmen are convinced that prices will rise another half cent, probably in November.

A month ago we mentioned that the supply of tankers for distillate oil was low. A report in the *Journal of Commerce* comments that only 20.8% of the world's tanker carrying capacity now flies the American flag. A year ago we had 23%, and in 1944 right after World War II, 60%.

The United States ranks first, with the United Kingdom second with 16.9%, and Norway third with 15.4%. The forecast is that if the present decline in tankers is not reversed, 1960 will find the United Kingdom in first place followed by Norway with the United States in the third slot.

Distillate Fueloils

PRIMARY STOCKS*
(Thousands of Barrels)
East of Rockies

	Aug. 10, 1956	*Aug. 12, 1955*
East Coast	44,981	44,551
Midwest	37,466	39,439
Gulf Coast	26,465	23,430
Total	108,912	107,420

*American Petroleum Institute.

No. 2 Heating Oil (Including No. 3 & PS200)

Price per gallon as of August 15, 1956

	Tank Car	*Tank Wagon*		*Tank Car*	*Tank Wagon*
Portland, Me.	10.8	14.5	Richmond	11.0	14.2
Boston	10.7	14.6	Charleston, S. C.	10.7	13.9
Providence	10.7	14.5	Chicago	11.2*†	14.6
Springfield, Mass.	10.95	15.1	Detroit	11.75*	15.2
Hartford	10.95	14.5	Cleveland	11.6*	14.6
New Haven	10.6	14.2	Minneapolis	10.75	14.3
Syracuse	11.6	14.8	St. Louis	10.9*	14.4
Albany	10.9	14.2	Indianapolis	11.35*	15.1
New York	10.6	14.7	Milwaukee	12.5*	15.5
Newark	10.6	14.1	Des Moines	10.5	14.7
Philadelphia	10.6	14.0	San Francisco	10.65*	13.2
Harrisburg	10.7	14.6	Portland, Ore.	11.25*	13.8
Baltimore	10.6	14.15	Seattle	11.25*	13.9
Wilmington, N. C.	10.7	14.0	Spokane	13.65*	16.3
Washington	10.7	14.65	Los Angeles	10.15*	12.7

*Delivered.
Tank wagon prices shown are for maximum one-time delivery discounts.
†Subject to .50¢ temporary allowance.

STOP

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- ODORS
- DELIVERY DISTURBANCES
- IRATE CUSTOMERS

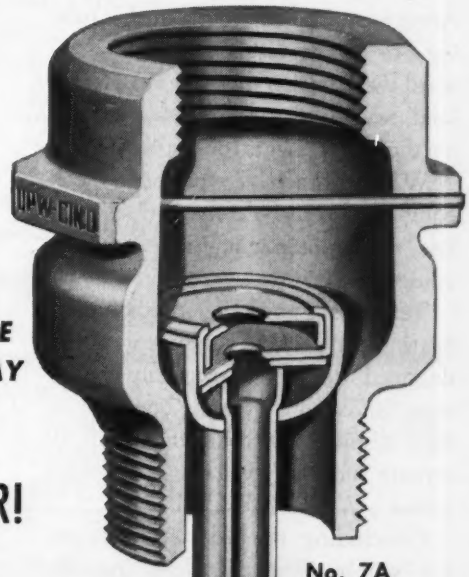
INSTALL OPW tank whistle*

* TANK FILL SAFETY SIGNAL FOR FUEL OIL STORAGE TANKS

Yes! You can stop these undesirable delivery nuisances, and more. For, in addition to controlling and eliminating hazardous conditions, this inexpensive OPW signaling device speeds up deliveries, increases filling efficiency and serves as the perfect shut-off-time alarm.

Whistle sounds constantly while tank is being filled. Whistle stops immediately and automatically when liquid level in tank reaches bottom of Whistle Tube.

Tank always fills to proper level. Length of Whistle Tube determines the desired liquid level, and safety expansion zone within the storage tank.



No. 7A

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By
Milburn Petty

WASHINGTON — Department of the Army has issued an order aimed at halting—or even reversing—the trend toward dieselization of army vehicles on land, sea and air, and otherwise reducing the requirements for distillate fuels.

Where practical, present diesel equipment is to be converted to gasoline "or non-petroleum fuel-consuming equipment."

Tent stoves and other portable field heating and cooking equipment will be designed "to operate primarily on gasoline but capable of being operated on light distillates or coal when such alternate fuels are available," the order stated.

Concluding, the order said this policy "will be reviewed at least annually to insure that it reflects the current petroleum availability situation and the Army's requirements."

Wartime Supply Worries Army

Apparently, the Army is concerned over the wartime supply of distillates, fearing that rationing of civilians would not squeeze out enough to cover the added military requirements.

This concern was first expressed last October by Brig. Gen. W. W. White, AF, the Pentagon's petroleum-logistics director.

Speaking then to the National Petroleum Council, General White (who has now returned to an oil industry job) said increased use of distillates—for jet fuel—"may pose a major problem in the future."

Three months later, at the next NPC meeting, White indicated that wartime demand for distillates would total near 2,000,000 barrels daily—including the stepped-up demand for new-type jet fuels.

The jet-fuel requirement, alone, would be more than 15% of the total free-world requirements for all petroleum products, White told the petroleum council.

He predicted that new treating methods and expanded use of additives will be needed in the future to insure increased production of distillates of usable quality from cracked stocks and other unsuitable stocks.

White urged that refiners build more of this type of refining capacity.

However, Army officials are "playing it safe" by cutting back their requirements of distillates, which should be reassuring to heating-oil consumers.

Producers Seek Oil Imports Cut

Nineteen domestic oil producer groups are pressing for action by ODM Director Flemming to limit total oil imports—including residual—to the 1954 ratio with domestic crude production, saying this is required by the 1955 Trade Agreements Law.

The producers contend that modification of the 1954 ratio—recommended by the Cabinet Fuels Policy Committee in 1955—has excluded 75% of total oil imports (including residual) from consideration.

Replying, Donal Sullivan, secretary of the Independent Oil Men's Association of New England, wrote Flemming to deny that the 1954 formula was part of the law enacted by Congress in 1955.

Sullivan attacked the "effrontery" of producers in urging that the formula be applied to residual imports at once.

"This is none of their business," he told Flemming. "It is our opinion that the problems of residual and crude imports are separate, and we object to the efforts of domestic producers to lump them together for political purposes. Imported residual is not causing a loss of market to domestic residual."

Sullivan said limiting crude imports would raise domestic crude prices, which would be reflected in higher product prices. Fueloil marketers would be dealt another blow in their competition with natural gas.

Cabinet's Imports Policy Eyed

Meanwhile, the Cabinet committee's task force is re-appraising the oil imports situation, particularly the 1954 formula.

Since this committee is approaching the imports situation from the long-range viewpoint, it is not expected that they will take into account developments in the Suez Canal controversy.

(A 13-company group, known as the Middle East Emergency Committee, has been set up. They have developed a "plan of action" to deal with any eventuality in the Middle East affecting free-world oil supplies, if necessary.)

So, it is still expected by observers here that the Cabinet committee will go ahead with its previously-indicated course of loosening—not tightening—the "voluntary" import control program.

The outcome likely will be further liberalization as to residual imports.

But producers are making capital of the Suez situation, saying it "illustrates the dangers involved in unrestricted oil imports and increasing dependency on such sources for essential strategic materials."

Draft 'Marketing Principles'

Now that the American Petroleum Institute's general marketing committee has voted over 2 to 1 for the idea of drawing up "a broad statement of good marketing principles," Chairman J. G. Jordan (Shell) has set the wheels in motion.

He has asked R. J. Connor (Gulf), chairman of the marketing committee's "code of ethics study group" to draw up such a statement of principles.

Roosevelt Seeks Oil Divorcement

Congressman Roosevelt (D, California) has concluded that nothing less than complete divorcement of retailing from oil suppliers can eliminate "certain evil practices" in the marketing of gasoline and other petroleum products. So, just before adjournment, he put in a bill (HR-12369) for such divorcement, to be studied by the House Judiciary Committee preparatory to action in the next Congress.

Also, there have been signs that the Department of Justice may announce some oil antitrust actions soon. This should cause no surprise—it's standard practice in presidential election years.

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SNAPLOCK WARM AIR PIPE — **DUCT, STACK SNAPLOCK** — **ANGLES ELBOWS,**

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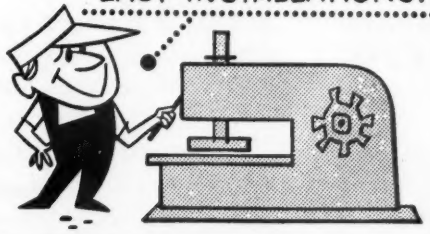

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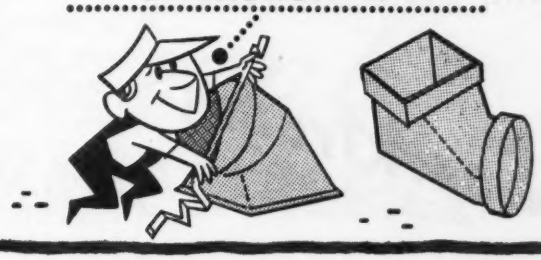

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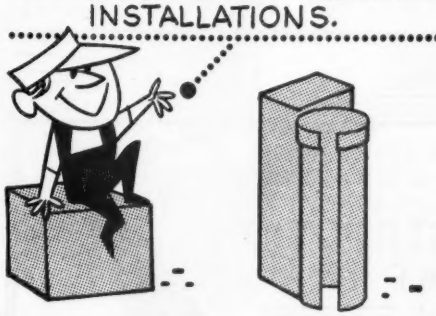

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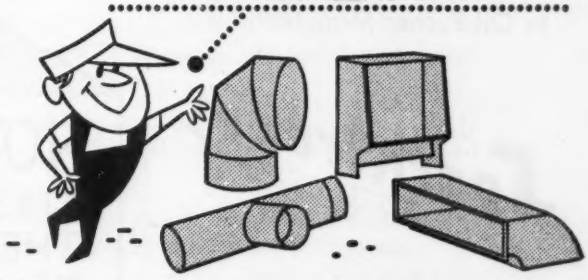

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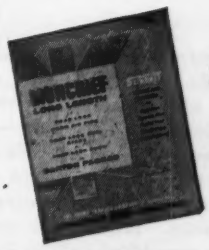

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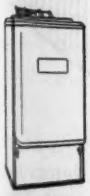
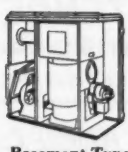
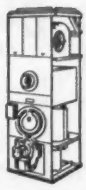


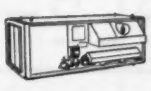
Year 'Round Air Conditioners 2, 3 or 5 Ton. Air or Water Cooled. Gas or Oil Fired.



Basement Type Winter Air Conditioners. Gas or Oil Fired.



Utility and Counterflow Winter Air Conditioners. Gas or Oil Fired.



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Jersey City, New Jersey

Temporary Thermostat helps Burtchaell to see Homeowner

WHEN AN OILHEATING dealer completes an installation in a new home, there often is a lapse between then and the time a new homeowner moves in. In between, of course, the installer rides herd on the job and tries to find out as early as possible to whom the builder sells the house.

Not always is the liaison between the builder and the dealer as good as it could be and then there always are competitors just as anxious to add the new homeowner to their list of fueloil customers. So, it's not uncommon for an oilheating dealer to install equipment in a new home and yet fail to secure the occupant as a fueloil customer.

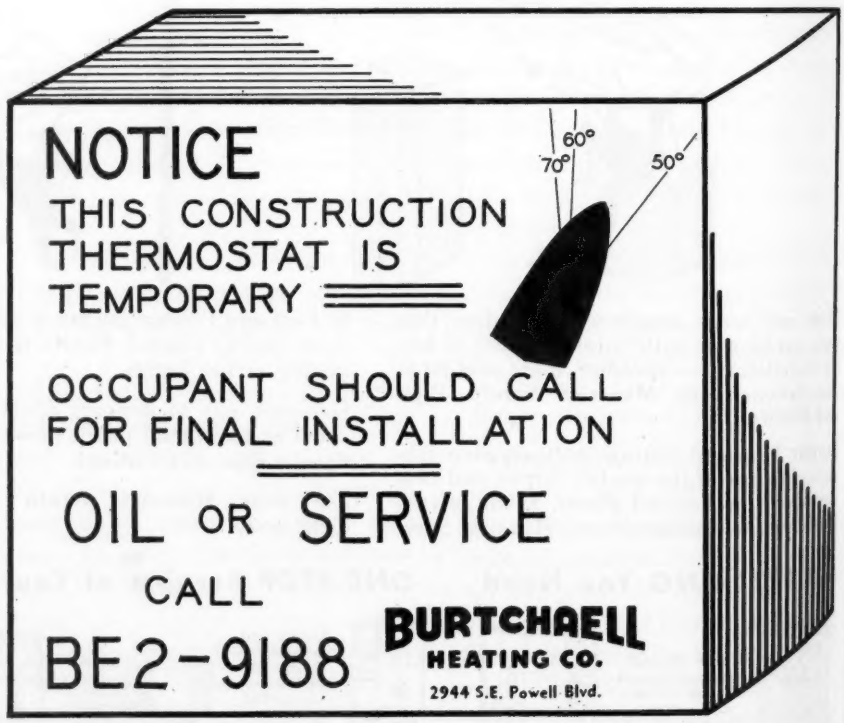
J. T. Burtchaell of Burtchaell Heating Co., Portland 2, Ore., experienced this frustration enough times to induce him to do something positive about practically making the new homeowner call Burtchaell for a final "inspection" of his oilburner jobs. He uses a "temporary thermostat" which is rather unsightly and projects farther out from the wall than the normal, permanent thermostat.

It serves a dual purpose, however, in that it minimizes damage from paint and plaster accumulations during decorating and contains on its nameplate specific instructions for the homeowner to follow in order to have the permanent control installed.

This is the way J. T. Burtchaell describes the "gimmick":

"Here's a picture of the new thermostat we are installing on our installations made in new homes. As you can see, the thermostat is temporary.

"Its purpose is to get away from the bugaboo of paint and plaster which just about always accumulate on a new thermostat during construction. We install this temporary job with a 16 penny nail to the stud, keep-



Temporary thermostat *used by Burtchaell Heating Co., Portland, Ore., on its oilburner installations in new homes. It's unsightly and just about forces the new homeowner to call the company to install the permanent thermostat. This assures Burtchaell of "first look" and the chance to make his "pitch," for the fueloil account. In answer to an inquiry as to where these temporary controls can be purchased, he said: "I'm afraid that unless they designed and make their own, oilheating dealers would have to purchase them from us, inasmuch as we fabricated them. I'd say that cost could be set at $3 each in lots of 20 or more."*

Bigger Profits

FROM SMALL HOME NEW HEATING AND REPLACEMENT JOBS!

WITH *Federal*

FPK PACKAGE BOILERS

Luxurious Hot Water Heat . . . Plus Year Round Domestic Hot Water Supply from oversize built-in tankless coils!

PRE-PIPED — Completely pre-piped . . . actually installs in minutes. Allows your men to do more jobs per day at lower costs.

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MAKE PIPE CONNECTION . . . HOOK IN FUEL . . .

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You'll find an open door to bigger new home heating and replacement profits with Federal Series FPK Packaged Boilers. A pioneer in packaged boilers, Federal combines top quality with engineering design into a completely pre-piped, pre-wired, pre-packaged steel hot water boiler that you can install at amazingly low cost. All necessary controls and accessories are installed at the factory . . . by experts in the wet heat industry . . . Federal's only business.

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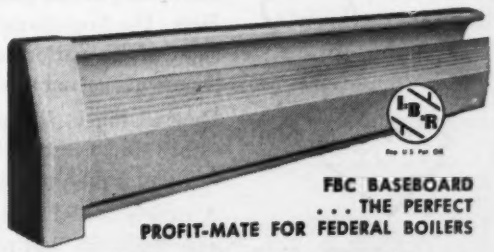

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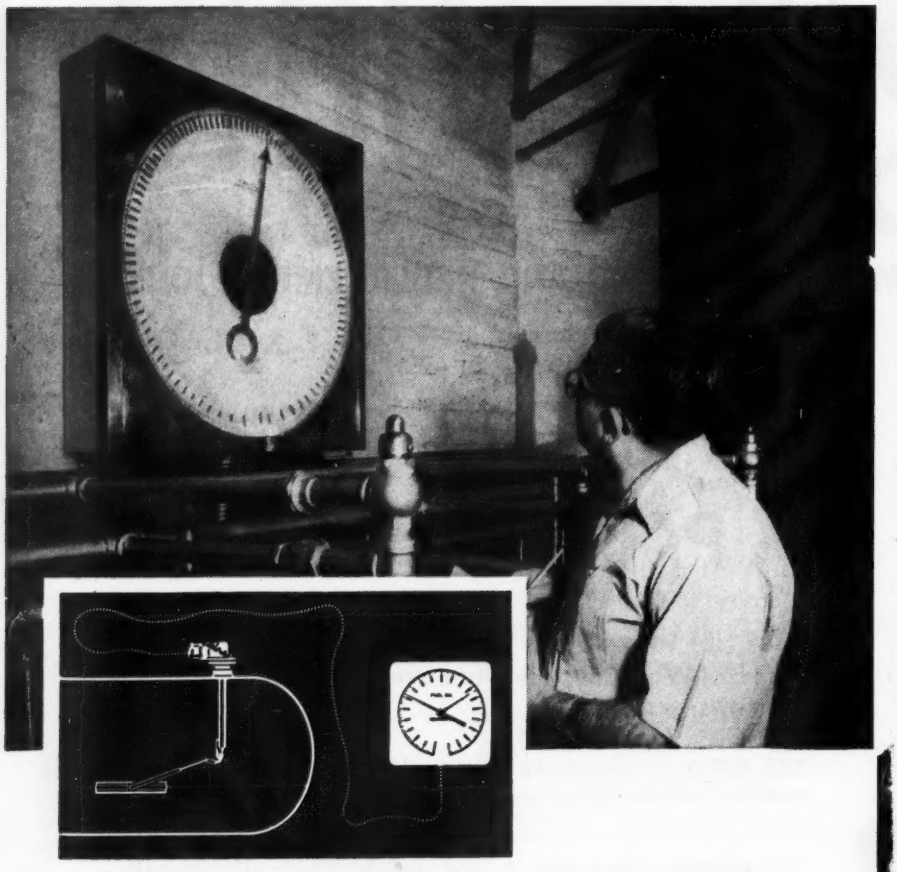

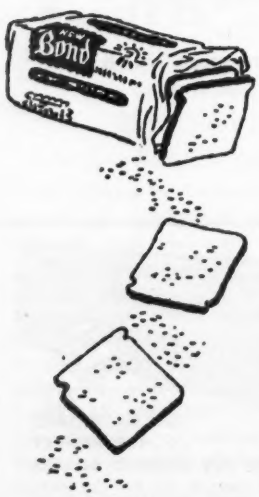

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The Liquidometer gauge installation at General Baking Company's Brooklyn plant is typical. It takes close to 7000 gallons of fuel oil per week to run the baking ovens, generate steam and heat the plant. Here, the important job of fuel gauging has been successfully performed by the same Liquidometer Senior gauge uninterruptedly for 29 years.

Dependability, low-maintenance, high readability, safety and ease of installation suit Liquidometers for your liquid gauging needs.

A variety of dial type Liquidometer gauges are available for direct and remote indication. For complete details write Dept. C.

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Liquids worth storing are worth measuring

THE LIQUIDOMETER CORP.

SKILLMAN AVENUE AT 36TH STREET, LONG ISLAND CITY 1, N. Y.

ing the thermostat several inches from the wall, leaving room for the plasterers and painters to work behind it. The thermostat is approximately 4½" x 4" x 1" deep.

"Primary reason for the temporary control is to afford us the opportunity to make a final call, finish up the installation, explain the operation of the heating plant and, of course, make our pitch for the fueloil business.

"Inasmuch as the installation of a heating plant is our sole means of securing fueloil customers, we are using this temporary thermostat 'gimmick' successfully and thought other fueloil distributors would like to know about it.

"The thermostat itself is low-priced, can be re-used many times and guarantees a call which at the very least gives us the name of the occupant for our service records and just about always gives us first crack at selling him fueloil.

"This is not the only way, of course, to make the first contact with a new homeowner, but for the last 25 years we've tried to secure the general contractor's co-operation to let us know the new owner's name when the sale is completed. In most cases, frankly, it hasn't worked out too well and there have been times when other companies have picked up the fueloil account.

"We've tried metal plates, decals, stickers and other printed labels to inform the customer he should call us upon occupancy, but here again we've had trouble. We've even found our names covered with competitor's advertising in a number of cases.

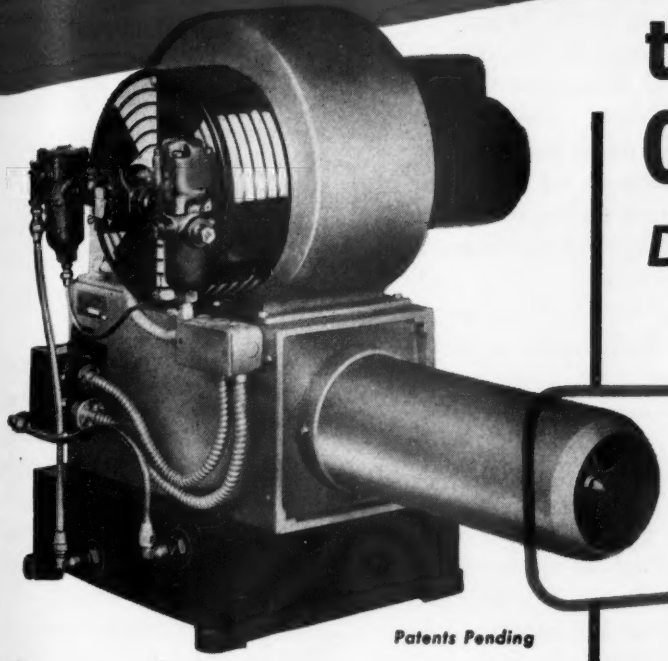
"With this temporary thermostat—which is an unsightly thing and so designed—we are assured of the 'first look.'"

❖

Report shows Oil major Fuel in Appleton, Wisc.

THE NINTH Annual Consumer Buying Habit Study of the Appleton-Neenah, Menasha, Wisconsin City Zone Market, compiled by the *Appleton Post-Crescent*, shows that oil is the favored fuel for home heating and that its use has increased from 46.1% in 1952 to 58.7% in 1956.

BIG SAVINGS YOUR CUSTOMERS WILL CERTAINLY WANT



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DRASTICALLY CUTS FUEL COSTS

Converts #4 (and #5) Oil to Burn Efficiently as #2 Oil.

✓ ***APPROVED*** for #4 fuel oil by Underwriters' Laboratories, Inc., and by the Board of Standards and Appeals of the City of New York.

✓ ***BEST BET*** for cutting fuel bills in apartment houses, schools, institutions, commercial and industrial buildings and heating processes by using lower priced fuel oil.

✓ ***AUTOMATIC*** — Electric fuel converter system, complete with safety shut-down and mechanical oil cut-off, is thermostatically controlled — automatically. Complete assembly easily accessible for quick service.

- **Built-in "Thermax" Converters Reduce Heavy Oil to Light Oil**
- **As Quiet as a #2 Oil Burner**
- **Easy to Install and Service**
- **No Complicated Parts**
- **Can Use Existing Piping in Practically All Cases**
- **3 Sizes—3 to 20 G.P.H. Larger Sizes Available Later**

Write for Bulletin and Prices

Inquiries Invited from Boiler and Furnace Manufacturers

SUN-RAY — FAMOUS THE WORLD OVER FOR QUALITY AND ECONOMY

Models for Every Heating Need in Sizes from 0.5 to 22 g.p.h.

SUN-RAY BURNER MANUFACTURING CORPORATION

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Distributed in Quebec and the Maritime Provinces of Canada by Economic Oil Burner Co., Ltd., 5721 St. Denis St., Montreal, Quebec and in British Columbia by Fred. Welsh & Sons, Ltd., 733 Beatty St., Vancouver, B. C.

QUALITY is our business ..without *any* compromise

AND ONLY Guardian GIVES YOU ALL THREE —

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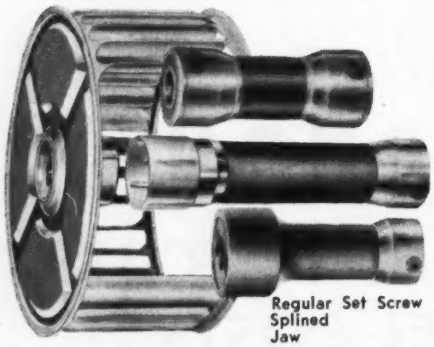


Regular Set Screw Splined Jaw

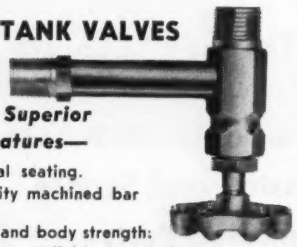
Only Guardian gives you these features—

- ROLL SPINNING—Exclusive process joins all three components at one time—while in final operating alignment.
- BRAIDED RUBBER—Ground to absolute true concentricity. Furnished in BUNA-N TUBE and NEOPRENE COVER. Lateral and angular alignment requirements fully met.
- ONE-PIECE DESIGN—Minimizes assembly and handling costs. Made to exact lengths required.

Over 5,000,000 Guardian couplings are on original equipment. This is your assurance of highest quality and universal acceptance in the field.

2. OIL TANK VALVES

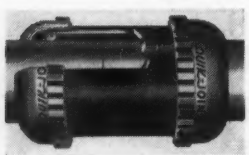
No. 1910 B



Check These Superior Guardian Features—

- Metal-to-metal seating.
- Highest quality machined bar stock.
- Greater wall and body strength.
- Fusible linkage available in all designs.
- Valve designs for every type of installation.

3. QUICK JOINT



Steel compression fittings for connecting steel pipe.

Patent No. 2,685,460

- Eliminates threading of pipe.
- Decreases cathodic corrosion and electrolysis.
- Guaranteed for pressure up to 2000 P.S.I.
- Allows 7° angular deflection.
- U.L. approved for oil and gas.

Write for free descriptive literature.

Guardian PRODUCTS CORP.
COUPLING DIVISION

1215 East Second Street
MICHIGAN CITY, INDIANA

Oil Progress Week Items for fueloil Distributors

TWENTY-NINE distinctive pieces of promotion and display material—ranging from a motion picture in Technicolor to an exciting prize contest—are being distributed to America's oil men by the Oil Industry Information Committee for their use during the ninth annual observance of Oil Progress Week, October 14-20. Many of these pieces have been designed specifically to aid fueloil distributors in telling their story of progress and achievement to customers and prospective customers. Others easily can be adapted to meet these specific requirements. Full details about the available materials may be obtained from any OIIC district office.

Cartoon Film

One of the biggest features of the observance will be the nationwide release, on October 14, of a delightful animated cartoon film entitled "Destination Earth." It tells an amusing and instructive story about a Martian's visit to the United States, and the "secrets" he discovers about oil, freedom, and the competitive enterprise that keeps American homes warm, and American autos and other machines operating. The film is given added impact by means of sales and loan flyers that promote widespread showings, and a colorful "take-home" leaflet for presentation to audiences.

Another outstanding event, to be used by both fueloil and service station dealers in hundreds of communities across the nation is the "Lucky Folder" plan. It provides essential information about the petroleum industry to consumers and, at the same time, enables both them and their dealers to win valuable prizes. The plan has been carefully tested in previous years. It has been worked out in such detail that any group of dealers can stage it successfully, whether they are located in a small town or a large city.

Display materials of special interest to dealers include:

A striking banner emphasizing the importance, convenience and low cost of oilheating.

Large and small bumper strips for trucks and cars.

Window and date posters and a snipe for use on billboard posters.

Three inexpensive animated exhibits telling oil's story in intriguing ways and suitable for display in office windows, stores, banks, lobbies, school halls, and auditoriums.

Dealers also may order postage meter slugs worded to call atention to their contributions to the public welfare.

Souvenirs for persons attending OPW events include the following:

A booklet telling what people like Admiral Kirk, Aviatrix Jacqueline Cochran, Captain Eddie Rickenbacker, Charles F. Kettering and Football Coach Bud Wilkinson think about the oil business.

An envelope enclosure leaflet called "All Work and No Payoff." This contrasts the number of hours an American and a Russian have to work to earn enough money to buy a gallon of oil.

Free Kits

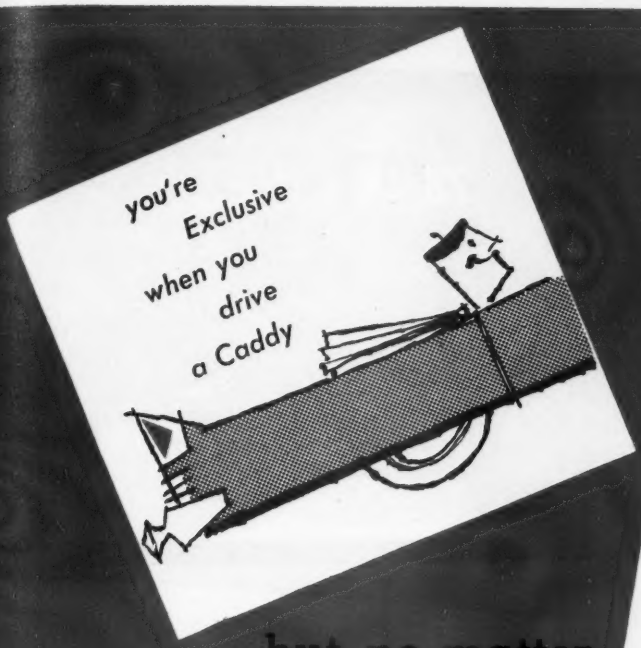
Three free kits of materials for use by committeemen who volunteer to organize OPW events also are available. One is a book containing proofs of advertisements in various sizes for use during the week, with provision for local tie-ins. The second includes materials that newspapers will want to use in publicizing the occasion. The third is a radio-TV equivalent of the press package. It contains a 15-minute script, a five-minute script dealing with the oil industry in the stage to which the package is sent, radio spots, and a state oil industry map TV card.

In addition to all this, the OIIC can supply:

A "Speakers' Sourcebook" containing a handy collection of oil statistics.

Folders addressed to dealers and their employees. These explain the reason for Oil Progress Week, and

(*Please turn to page 33*)



but no matter
how you look at it
...you're exclusive...
you've got an exclusive
with

SUPER IGNITION TRANSFORMERS

SUPER Transformers are "tops" . . . tops in Quality dependability and performance. Yes, you're exclusive because you are using the best. SUPER has scooped the field in offering you a positive method of encapsulation that locks out moisture . . . forever; a patented radio and TV shielding which effectively screens out static; and above all, a 2 year guarantee against defects in workmanship and materials. Yes, you've got an exclusive with the ignition transformer proven dependable over the years . . . SUPER

SUPER . . . *Your Best Buy in Ignition Transformers*

UNION ELECTRIC and MANUFACTURING CO.

1057 SUMMIT AVENUE, JERSEY CITY 7, N. J.

"I'll say Ford Trucks cost less — 300,000 miles a

"With our Fords, payloads average better than 65% of total weight," says Mr. Hurley.

"Elimination of excess weight accounts for Ford's high payload. Yet Fords are much stronger than many heavier and higher-priced tractors. Ford materials have always been the best in their class." The new F-900 pictured here gives you a choice of two powerful, g saving Short Stroke V-8 engines—either the 200-h *Torque King* V-8 or the 212-h.p. *Torque King* Spec V-8. New Max. GCW—60,000 lbs.

Mr. Hurley is confident that his new '56 F-900's will equal or pass the 300,000 mile mark.

"A truck engine takes a beating in my kind of work, but this Ford Short Stroke engine can really take a lot of punishment and come back for more."

es and still going strong"

says Mr. George Hurley, President of Eastern Tank Lines. "Some '51 and '52 Ford Tractors in our fleet have operated over 300,000 miles and are still running 300 to 400 miles a day."

Eastern Tank Lines, Somerville, Mass., is one of the largest over-the-road petroleum haulers in New England. And their all-Ford Fleet is among the highest in miles registered every year. Each truck averages about 75,000 miles hauling petroleum products between Massachusetts and Vermont.

Here's what President Hurley has to say about his Ford Fleet of 40 BIG JOBS. "I figure my trucks as a long term investment. To pay off, they have to be able to take a real beating and give me plenty of dependable service. Aside from big truck ruggedness—Ford has the *POWER and GO* to take off faster and cruise more easily than other trucks with bigger, more expensive engines. In short—Ford Trucks spell out big performance at low maintenance and operating costs."

When you take *everything* into consideration . . . initial cost, resale value, operating and maintenance costs, and the fact that Ford Trucks last longer, you'll agree Ford Trucks cost less.

FORD TRUCKS LAST LONGER

Using latest license registration data on 10,502,351 trucks, life insurance experts prove Ford Trucks last longer.

fueloil & oilheat

A BRANDED PRODUCT IS EASIER TO REMEMBER ...Easier to Sell!

That's why it pays you to sell Mobilheat—America's famous fuel oil brand. It's the fuel oil known to thousands of oil burner owners all over the country.

In addition, Mobilheat is backed by one of the greatest names in the petroleum industry—Socony Mobil, with 90 years of oil marketing and merchandising experience. Make it warm for your customers—"hot" for your competition with Mobilheat!

SOCONY MOBIL OIL CO., INC., and Affiliates: MAGNOLIA PETROLEUM CO., GENERAL PETROLEUM CORP.

show why all oil men should participate.

A pattern proclamation that may be used by local mayors or other authorities to call the attention of residents to the observance.

Finally, a complete, economical package of materials for use by dealers in smaller communities has been prepared. It contains generous supplies of souvenir books, leaflets, children's games, date posters, large and small bumper strips, banners, window posters, dealer folders, an exhibit, and a manual and materials catalogue for use by committeemen in arranging activities. This is a $35 value for only $25 per package.

All in all, this year's materials are more ample and diversified than ever before. Fueloil distributors, especially, will find them indispensable in making this their biggest and best Oil Progress Week.

For more information, write to the Director of Information, American Petroleum Institute, 50 West 50th St., New York 20, N. Y.

❖

Construction records set for July, first 7 Months

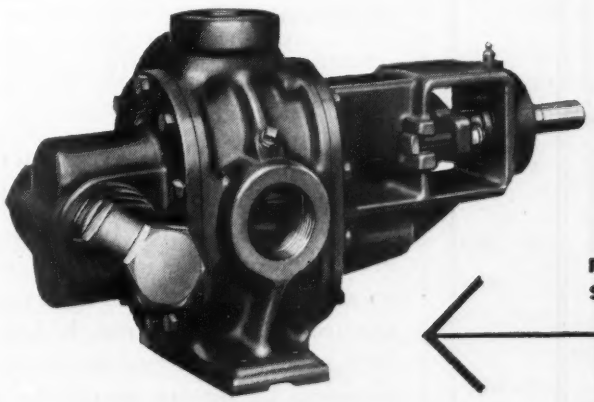
ACCORDING to preliminary estimates prepared jointly by the U.S. Departments of Commerce and Labor, new construction in July expanded seasonally to $4.2 billion, a figure surpassing the previous July high set in 1955.

A new record high of $24.1 billion in total value of construction for the first seven months of 1956 also was set for the period.

Construction expenditures in July hit a record annual rate of $44.4 billion, when adjusted seasonally, as compared with actual outlays of $43.0 billion in 1955.

Almost all types of construction contributed to the 5% rise from June to July with outlays for eight categories reaching all time monthly highs: private industrial buildings, office buildings and warehouses, social and recreational buildings, public utilities, highway work, public education buildings, sewer and water facilities and public service enterprises.

Tank Truck Operators with an Eye to ECONOMY EFFICIENCY and DEPENDABILITY Install



SELF-PRIMING
SERIES 3600 PUMP
PRESSURES TO 90 P.S.I.
SIZES 40 to 300 G.P.M.

WITH
MECHANICAL SEAL

ROPER
Rotary Pumps

SEE YOUR DISTRIBUTOR!

GEO. D. ROPER CORPORATION
769 BLACKHAWK PARK AVE., ROCKFORD, ILL.

. . . there is
something NEW
under the sun . . .
THE
Tattle-Tale
TRADEMARK

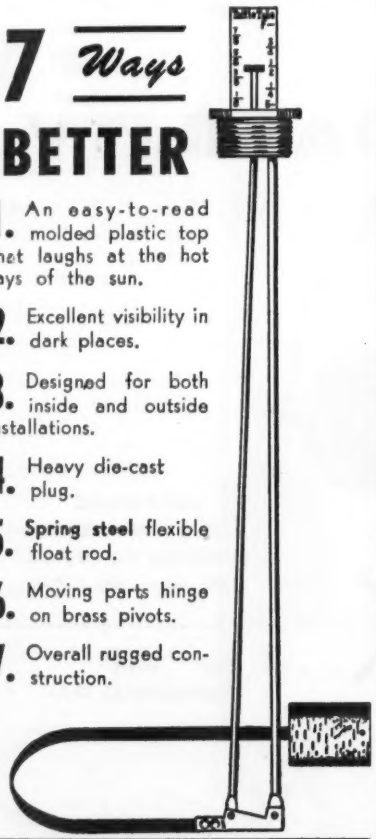
• Dot 7-C
OIL TANK GAUGE

"You will never get as much QUALITY at such a LOW PRICE"

A new model low-priced gauge with exclusive features not found in many of the highest priced gauges

7 *Ways* BETTER

1. An easy-to-read molded plastic top that laughs at the hot rays of the sun.
2. Excellent visibility in dark places.
3. Designed for both inside and outside installations.
4. Heavy die-cast plug.
5. Spring steel flexible float rod.
6. Moving parts hinge on brass pivots.
7. Overall rugged construction.



MR. DEALER:
Don't miss stocking this new gauge that defies all competition.
A real leader — The No. 1 Best Seller that permits you to offer top quality at a very low price.

WRITE FOR OUR LOW PRICES
homeward Products Inc.
3420 S. W. 9th St.
Des Moines, Iowa

Big burner Shipments upped 11.7% in first 6 mos.: OHI

SHIPMENTS of commercial-industrial oilburners for the first six months of 1956 are 11.7% above those for the same period in 1955, according to a report of the Market Research Department, Oil-Heat Institute of America, Inc., New York 36, N. Y.

Total shipments for June were 3,065 units which is 14.2% above June the year before, OHI reports. For the first six months of 1956, 15,885 units have been shipped.

Based on seasonal trends, the Institute predicts total shipments for the year at 38,000 units which would make 1956 one of the banner years for commercial-industrial oilburners.

A breakdown as to size and type of shipments for June is as follows:

	Oil-burners	*Gas-Oil burners*
HORIZONTAL ROTARIES		
2½ and under	76	—
Over 2½ to 8	28	—
Over 8 to 30	507	14
Over 30 to 100	611	30
Over 100	86	7
Total Shipments	1308	51
GUN BURNERS		
Over 5 to 30	1492	92
Over 30	41	6
Total Shipments	1533	98
MECHANICAL ATOMIZING		
30 and Over	75	—
TOTALS, ALL TYPES	2916	149

❖

June Contract Awards down still second high for Month

CONTRACT AWARDS for future construction during June in the 37 Eastern states totaling $2,197,815,000 represented a 3% decrease from the June, 1955 awards but the cumulative total of awards for the first six months of 1956 established an all-time record for such a period.

According to the report of the F. W. Dodge Corp., construction news and marketing specialists, individual awards for June show that the heavy engineering category with awards of $577,325,000 was the highest for any June in Dodge history and 25% greater than June, 1955. In the other major construction categories, nonresidential building at $794,272,000 was 6% lower than a year ago, and residential building at $826,218,000 was 13% below last year.

All major categories set new all-time records for the first six months cumulative total of $13,198,959,000. Individually they show: non-residential at $4,607,682,000, up 11%; residential at $5,698,668,000, up 5%; heavy engineering at $2,892,609,000, up 21%.

Commenting on the Dodge Reports figures and the current situation, Dr. George Cline Smith, vice-president and economist of F. W. Dodge Corp., said:

"The drop in June contract awards below June of last year is the first such year-to-year decline in nine months. Perhaps more significant is the fact that for the first time in 30 months both residential and non-residential buliding categories were below the preceding year.

"However, one month does not make a trend, and it would be rash to draw any long-range inference from these June figures alone. Contracts in June of last year were extremely high, especially in the non-residential category, and this affects the year-to-year comparison. Actually, last month's total of nearly $2.2 billion was the second highest ever reported in June, and exceeds the third highest June by 27 per cent."

❖

Oil is leading Fuel in Chicago Market Area

STATISTICALLY, oil is the leading heating fuel in Chicago and its surburbs but it places second in both city and suburbs when the two market areas are analysed separately, according to the "1956 Consumer Analysis" compiled by the *Chicago Daily News*.

For Chicago and suburbs, statistics show a total of 35.6% of the homes are heated by oil; 35.2% by coal; 28.5% by gas and 0.7% not specified.

In city homes only, oilheating at 33% is second to coal with 43.4%. And for the suburbs, oil, which accounts for 42.6% of the home heating, is second to gas, which accounts for 44%.

In the airconditioning field, the report shows that 8.8% of all households in the Chicago and suburban area have a room airconditioner. For the city, the figure is 8.6%; for the suburbs, 9.3%.

OHI issues Breakdown on Attendance at Show

THREE-FOURTHS of those attending the recent Oil Heat and Air Conditioning Exposition in New York City, June 11 were allied with the distribution or marketing side of the industry. According to the Oil-Heat Institute of America, Inc., total attendance at the Coliseum was 12,303.

Three classifications within the distribution section — oilheating equipment dealers, oilheating equipment and fueloil dealers, and fueloil distributors —accounted for 26% of the attendance.

Individuals who specify, recommend or approve equipment were 10% of the total and industry manufacturers, 11%.

There were 134 foreign visitors at the show and the remainder (316) of those attending represented trade associations, import-export companies, and the press.

The next exposition will also be at New York's Coliseum during the week of June 9 and the show committee has begun work on the hotel room situation and the contracting and labor problems.

Some manufacturers have suggested that the show run Monday through Thursday eliminating Friday. This would give exhibitors a full day to tear down before running into overtime and would allow most personnel to leave the city before the weekend. OHI is polling exhibitors on the point.

❖

Mack Trucks set to acquire Brockway Trucking Business

AN AGREEMENT whereby Mack Trucks, Inc., will acquire the Brockway truck business has been signed by P. O. Peterson, president of Mack Trucks, and H. O. King, president of Brockway Motor Co., Inc.

Under terms of a special purchase-rental agreement, Mack will take over all of Brockway's manufacturing, sales and service facilities and carry on the business as a separate division of Mack Trucks, Inc.

The agreement calls for outright purchase by Mack of Brockway's inventory. In addition, the Brockway plant and manufacturing facilities at Cortland, N. Y., together with the Brockway-owned branches, will be rented by Mack with an option to purchase.

Mack will maintain the Brockway organization in its present form and will continue to manufacture and sell Brockway trucks and products. Parts and service will be available through the present sales and services branches.

The agreement brings together two of the oldest heavy-duty truck manufacturers in America. Brockway was first formed in 1875 as a carriage maker. Both Mack and Brockway entered the truck field about the turn of the century.

The announcement of the agreement said that acquisition of Brockway by Mack Trucks, Inc., will enable both companies to expand and strengthen their production, sales and service. The agreement awaits formal approval by Brockway stockholders.

❖

"Digest" Survey reveals Reps' vital Statistics

THE MAJORITY of manufacturers' representatives employ salesmen on a straight commission basis, a survey conducted among such representatives by *Rep Digest*, publication of Heating Publishers, Inc., has revealed.

Sixty-five per cent of the representatives employ salesmen of whom 47% are paid straight commission; 24%, salary and commission; 7%, straight salary, and 22%, salary with profit sharing. The reps' salesmen on straight commission receive an average of 28% of the reps' sales commission. Answers indicated that more representatives favor a salary-plus-incentive basis of payment than now are using it.

Cost of doing business for manufacturers' representatives averages 19% of gross volume, they reported. Sources of help in getting good lines were listed as follows: FUELOIL & OIL HEAT, 17%; letters, 26%; friends' recommendations, 42%; *Rep Digest*, 8%, and associations, 7%.

Representatives reported their average number of yearly calls on customers as jobbers, 21; dealers, 17, and manufacturers, 14.

A NEW CONCEPT IN SOOT REMOVAL

Just Press A Button!

Tried and proven in thousands of boilers and furnaces, this revolutionary NEW soot remover cuts hours off every cleaning job, adds profits and goodwill every day.

SOOTSPRAY is non-inflammable.

SO SAFE EVEN A CHILD CAN USE IT
(Connecticut Permit #69)

ASK YOUR WHOLESALER FOR GENUINE, ORIGINAL SOOTSPRAY

Just spray once over lightly and ignite. Natural draft carries spray throughout the entire system, into flues and chimney, too. SOOTSPRAY gives complete coverage and exceptional cleaning quality.

SAFE: Will not harm delicate metal parts.

ECONOMICAL: One can of SOOTSPRAY equals 4 lbs. of powder.

SOOTSPRAY IS THE ONLY AEROSOL SOOT REMOVER COVERED BY A PATENT PENDING

BEWARE OF IMITATIONS!

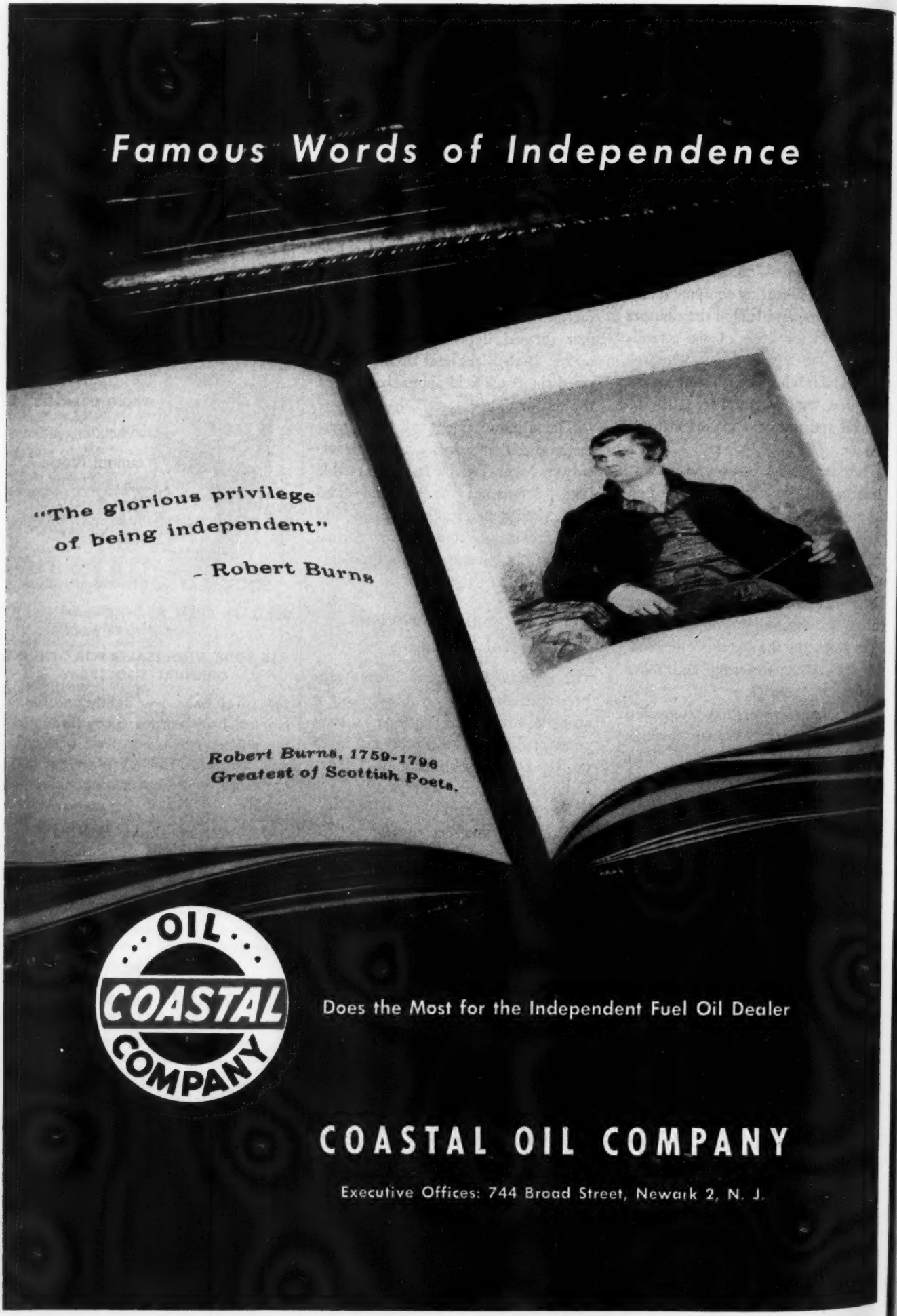
QUALITY and SAFETY (not QUANTITY alone) count in an aerosol soot remover.

STEWART-HALL CHEMICAL CORP.
P. O. Box 66H, Fleetwood Station
Mt. Vernon, New York

☐ Send FREE details on SOOTSPRAY for dealer use.
☐ Send FREE details on special SOOTSPRAY wholesaler plan.
☐ Send 6 can trial order of SOOTSPRAY @ $1.80 per can.

Attention: .....
Company: .....
Street: .....
City: ..... State. .....

Famous Words of Independence



OIL COASTAL COMPANY

Does the Most for the Independent Fuel Oil Dealer

COASTAL OIL COMPANY

Executive Offices: 744 Broad Street, Newark 2, N. J.

Fluid Heating-Cooling is having biggest Year: Reed

DESPITE a slight decline in new home construction, the fluid heating and cooling industry will enjoy its biggest year for a decade, John E. Reed, president of the Better Heating-Cooling Council, predicted at the start of Better Heating-Cooling Week last month.

Reed pointed out that installations of hot water and steam heating systems are increasing steadily and will reach an estimated volume of $353,000,000 by the end of this year, a 10% gain over 1955.

"We fully expect to exceed $500,000,000 in volume by 1961," Reed said.

Reed is secretary of H. B. Smith Co., Westfield, Mass., and chairman of the Sterling Radiator Co., in addition to holding the presidency of the recently-formed Better Heating-Cooling Council.

The Council, whose primary aim is to acquaint the consumer with the importance of quality heating and cooling systems, has 42 members, including manufacturers of hot water and steam heating and cooling equipment and a national association of heating and airconditioning contractors. Members are the following:

Aldrich Co.; American Radiator and Standard Sanitary Corp.; Anthes-Imperial Co., Ltd.; Autogas Co.; Automatic Burner Corp.; Bastian-Morley Co., Inc.; Bell and Gossett Co.; The Brown Products Co.; Burnham Corp.; Combustion Engineering, Inc.; Crane Co.; The Dole Valve Co. and Fedders-Quigan Corp.

Also, Federal Boiler Co., Inc.; Fitzgibbons Boiler Co.; Hoffman Specialty Mfg. Corp.; Hydrotherm, Inc.; Kewanee Division, American Standard; Kritzer Radiant Coils, Inc.; McDonnell and Miller, Inc.; Mechanical Contractors Association of America; Modine Mfg. Co.; Mt. Hawley Mfg. Co.; National-U. S. Radiator Corp.; John J. Nesbitt, Inc.

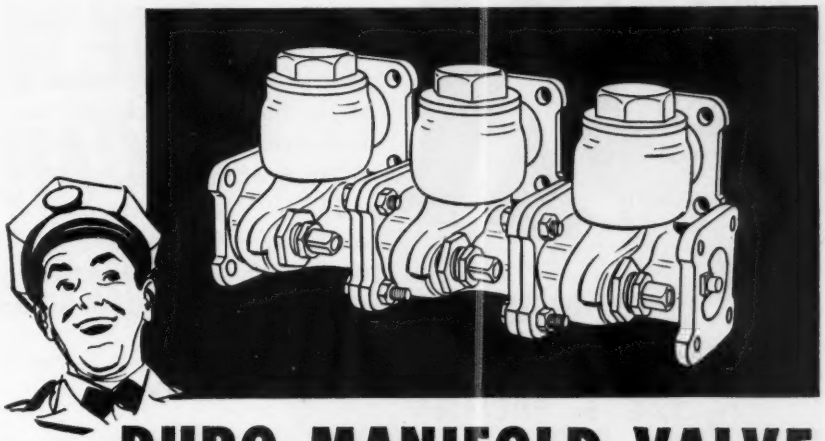
And, Pacific Steel Boiler, Div., Peerless Heater Co., Division of Eastern Foundry Co.; Portmar Boiler Co.; Radiant-Ray Radiation, Inc.; Raypack Co., Inc.; The H. B. Smith Co., Inc.; Spencer Heater-Lycoming Div.; Spi-Rol-Fin Corp.; Sterling Radiator Co.; Taco Heaters, Inc.; Thatcher Furnace Co.; Tuttle and Bailey, Inc.; Vulcan Radiator Co.; Warden King, Ltd.; Warren Webster and Co.; Waterfilm Boilers, Inc., and Weil-McLain Co.

❖

Louis Schneider & Co., Indianapolis, Ind., has been appointed Indiana representative for Maid-O'-Mist, Inc.

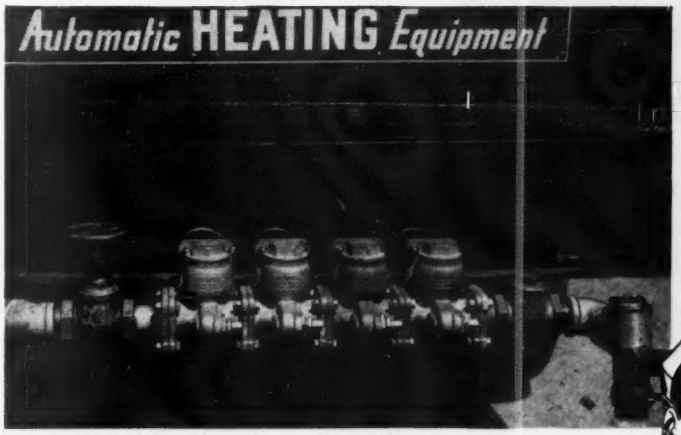
ELIMINATES SUBSTITUTION AND INCORRECT MEASURE

on multi-compartment metered oil tank trucks



DURO MANIFOLD VALVE

TYPE 1A SELECTOR TYPE



The above illustrates a Duro four-valve manifold arranged for both pump and gravity delivery.

4 SIZES IN BRONZE
1½"
2"
2½"
3"

- The standard of the industry for 20 years.
- Eliminates incorrect measure due to induction of air from one compartment while pumping from another compartment.
- Assures delivery only from compartment controlled by valve opened.
- ALL VALVES OTHER THAN THE ONE IN USE ARE POSITIVELY LOCKED BY THE AUTOMATIC ACTION OF THE SELECTOR PINS.
- Easily serviced—valve disc may be removed and replaced without disturbing pipe connections. Unique packing gland assembly makes repacking a simple operation.
- May also be used as a non-selective manifold valve by omitting the selector pins wherever it is required to manifold two or more pipe lines.
- The DURO MANIFOLD VALVE as a selective type manifold valve for use on oil trucks has been approved by the Massachusetts Director of Standards and other states requiring such valves.

DISTRIBUTED BY:

U. S. FLEXIBLE METALLIC TUBING CO.
63 Main St., San Francisco, Calif.
454 East Third St., Los Angeles, Calif.
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501 No. 18th St., Billings, Mont.

THE LANG CO., INC.
1st South and 2nd West, Salt Lake City, Utah

OILMEN'S SERVICE & SUPPLY CO.
967 Commonwealth Ave., Boston, Mass.

CRANDALL'S SERVICE CO.
249 4th Ave. So., Twin Falls, Idaho

WILLBORN BROS. CO., INC.
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1843 W. Moreland St., Phoenix, Ariz.

Additional sales territories open — jobber inquiries invited

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...Get the

SOOTMASTER

Filter Unit

SOOTMASTER Filter Unit, designed for easy installation in container of G. E. and Premier Furnace Cleaners, eliminates the outside bag. Gives double protection against leaks and blow-outs. THROW-AWAY BAG provides a safe and easy method of dirt disposal.

$19.75 Complete with 10 throw-away bags and quick-release tie-cord.

- *Order from your jobber*
- *Jobbers' inquiries invited*

Master-Craft
SUPPLY CO., INC.
HAVERSTRAW, NEW YORK

API Fueloil Committee will meet November 12

THE FUELOIL COMMITTEE of the Division of Marketing will meet November 12 during the annual meeting of the American Petroleum Institute. Most of the marketing sessions will be at the Sheraton Blackstone, and the fueloil group will meet in the Crystal Ballroom of that hotel at 2:30.

M. N. Vining is chairman of the committee. Divisional meetings begin Sunday afternoon, November 11, at the Conrad Hilton and extend through Wednesday morning.

❖

Michigan College to Sponsor Petrol. distribution course

A TWO-YEAR course in petroleum distribution will be offered in the Fall Semester by Western Michigan College which will pioneer the project in the midwest.

Pointing out that there are 11,000 businesses handling petroleum products in Michigan which do over $1 billion a year in sales, the statement announcing the course said the need for such a course is essential because of the importance of the oil industry in Michigan's economy.

The course will be a cooperative program of co-ordinated school and work with each student spending half his time in the classroom and the other half on a job supplied by a participating oil company.

At a meeting of the advisory committee, headed by Ralph Townsend of Kalamazoo, the following classroom courses were agreed upon: communications, economics, petroleum physics, petroleum chemistry, use and application of petroleum products, salesmanship, marketing, small business management, business law, business mathematics, accounting, psychological aspects of business, business speech.

Work experience will be provided in such areas as petroleum transportation, storage and handling, petroleum sales, sale promotion and advertising, accounting and office management and oilheating.

On completion of the two-year program, students will receive certificates in petroleum distribution. They then may accept a position in the oil industry, or continue their education for two more years to earn a bachelors degree in petroleum distribution.

Full details of the course are contained in an illustrated booklet available by writing to: Dr. George Kohrman, Dean School Applied Arts & Sciences, Western Michigan College, Kalamazoo, Mich.

❖

Allied opens heavy oil Terminal on Ohio River

A NEW HEAVY fueloil terminal recently was dedicated at Wellsville, O., by Ashland-Allied Oil Co.

Rex Blazer was the principal speaker at a banquet given by the local Chamber of Commerce. He told the audience that this was the 18th terminal constructed by Allied and Ashland on the Ohio-Mississippi River system.

❖

3.2% surveyed in Spokane plan new Installations

OF A TOTAL of 167,260 families surveyed for the 1956 Consumer Analysis of the Spokane Market by the *Spokesman-Review* and the *Spokane Daily Chronicle*, 5,300—or 3.2%—are planning new installations of heating equipment.

Of this number, 1,232—21.2%—are planning on oil heat; 1,276, or 24.1%, electric heat; 1,042, 19.7%, gas heat; 887, 16.7%, coal heat.

At present, 57.5% reported oil heat in use; 23.7%, coal; 11.2%, wood; 8.8%, electric; 1.2%, gas, and 0.1% coke.

❖

Glenn E. Seidel has been appointed to the newly-created position of vice-president in charge of engineering, Minneapolis-Honeywell Regulator Co., Minneapolis, Minn. He has been with the company for 14 years and since 1952 has been vice-president in charge of engineering in the Minneapolis plants. He now will have responsibility at the top-management level for co-ordinating and directing research and engineering activities throughout the corporation.

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Modulation with the Magic-Heet Control adjusts the gas flame to suit heating needs, puts an end to "on-off" heating. (Gas models only)

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Heating and cooling units designed for each other. Heating units have fan capacity for cooling. Quick, economical cooling additions later.

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Styled for out-in-the-open use. Dimensioned for space-conscious houses. Models and sizes for every heating and cooling application. Oil or gas.

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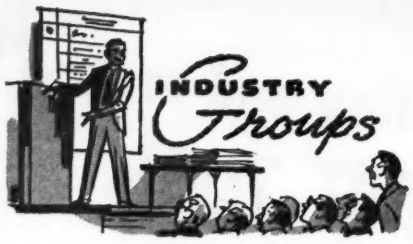

Activities of local and national industry associations are reported monthly in this department. Secretaries are invited to send reports of their Group's activities to the editor by the 5th.

Industry groups seek standard Ratings for cooling Equipment

RECOGNITION of the industry's responsibility in consumer relations was demonstrated as two industry trade associations—the National Warm Air Heating and Air Conditioning Association and the Air Conditioning and Refrigeration Institute—joined forces to establish an industry-accepted procedure for testing and rating central airconditioning units.

At a preliminary meeting held in Washington July 6 and attended by representatives of both associations, a joint committee was organized to evaluate standards now available for testing and rating airconditioning equipment supplied either as packaged or matched components for field assemblies and suitable for connection to ducted distribution systems. This committee also will prepare recommendations covering changes or adoptions of these standards together with recommended procedures of compliance. Final results will be submitted to members of the industry for approval and acceptance.

The committee is headed by Richard J. Dill, National Bureau of Standards, and includes K. T. Davis, Carrier Corp.; R. A. Gonzalez, Airtemp Division, Chrysler Corp.; Graydon Peoples, Lennox Industries, Inc.; J. A. Gilbreath, Air Conditioning Division, Westinghouse Electric Corp.; A. F. Ward, Worthington Corp., and J. O. Yund, Servel, Inc.

Oil Heat Assn. of Minnesota readies fueloil Promotion

ALL SET and ready to go is the profueloil promotion of the Minnesota Oil Heat Association for which a budget of $35,000 to $40,000 is anticipated.

Participants, who are mainly from the Twin Cities, are contributing on the basis of $250 per million gallons at the retail level and $150, at the wholesale level. Finance chairman Frank Schiefelbein of Midwest Oil Co., finance committee chairman, has been charged with collection and disbursement of funds.

Elected chairman of the advertising committee was Jack Reed, Reed Oil Co., White Bear Lake. Committee members are Bill Marquis, Standard Oil Co.; Tom Gemlo, Petroleum Service Co.; Craig Shaver, Dickey & Shaver, Inc., Wayzata; C. W. Johnson, Western Oil & Fuel Co.; Mark Rollins Oil, and Dick Hassett, Hassett Oil Co., St. Paul.

NHAW protests Manufacturers' furnace Sales to Builders

A RESOLUTION protesting the practice of some manufacturers and wholesalers in selling furnaces and equipment direct to builders has been adopted by the National Heating & Airconditioning Wholesalers, Inc.

The resolution urges all NHAW members and all heating and airconditioning dealers and dealer contractors in general to patronize those wholesalers and manufacturers who do not engage in this practice but whose policies serve rather to protect the dealers' interests.

Wisconsin sets up co-operative builder advertising Program

A CO-OPERATIVE advertising program is being offered builders constructing houses with oil heat by the Oil Heat Institute of Wisconsin, Milwaukee, Wis.

To those builders who will use an emblem cut entitled "Safe and Snug with Automatic Oil-Heat," the group makes the following advertising allowance in payment: $10 for any one-quarter page ad or larger, using a minimum size cut; $20 for any one-half page ad or larger, using second largest cut; $30 for any three-quarter page ad or larger, using largest cut; $40 for full page ad, using large cut.

These mean banner sales for Atlantic heating oil distributors

In these days of brisk competition for the heating oil dollar, Atlantic distributors enjoy three very important advantages:

QUALITY PRODUCT

First, they have a high-quality, triple-refined product to sell with the knowledge that it is available in continuous, dependable supply.

SALES TRAINING

Second, they have access to an intensive sales-training program which is backed by Atlantic's 85 years of retail marketing experience.

ADVERTISING SUPPORT

Third, they have the support of a strong co-operative advertising program. TV, radio, newspapers and direct mail are used to help distributors find new customers and hold old ones.

New and improved Atlantic Heating Oils are available at conveniently located pipe line and water terminals.

Why not call us to discuss how you can represent this well-supported brand in your market?

TERMINALS AT:

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Albany, N. Y.
Binghamton, N. Y.
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Elmira, N. Y.
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Syracuse, N. Y.
Wayland, N. Y.
Newark, N. J.
Trenton, N. J.

Gloucester, N. J.
Bridgeton, N. J.
Boston, Mass.
Akron, Ohio
Allentown, Pa.
Altoona, Pa.
Exton, Pa.
Greensburg, Pa.
Johnstown, Pa.
Lebanon, Pa.
Mechanicsburg, Pa.

Northumberland, Pa.
Philadelphia, Pa.
Pittsburgh, Pa.
Reading, Pa.
Williamsport, Pa.
Wilmington, Del.
Baltimore, Md.
Salisbury, Md.
Richmond, Va.
Charlotte, N. C.
Greensboro, N. C.

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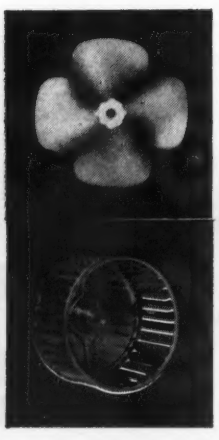

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Moline, Illinois

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644 East Maple Road (38th St.)
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Wichita, Kansas

Ogle Engineering Sales
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Farrow to supervise Course M of oil-heat service School

THE TWELFTH ANNUAL oil heat service school—Course M—of the Oil Heat Institute of New England will be presented in three sections, starting September 10, under the supervision of Hollis L. Farrow, newly-appointed assistant to Ivan C. Sutherland, director, department of education, of the Institute.

Subjects covered in Course M will be those chosen by last year's students. New types of displays, visual presentations and student participation will feature the course held under the sponsorship of local oil heat industry committees and, in some locations, in joint sponsorship with fire departments.

Group I, starting September 10, will be held in Worcester, Mass.; Claremont, N. H.; Concord, N. H.; Augusta, Me., and Dover, N. H. Group II, starting January 7, will meet in Salem, Mass.; Framingham, Mass.; Hyannis, Mass.; Quincy, Mass., and Malden, Mass. Group III, starting March 18, will be held at Springfield, Mass., Pittsfield, Mass.; Hartford, Conn.; Bridgeport, Conn.; Providence, R. I.

Farrow, supervisor for the course, attended Huntington Preparatory School, Northeastern University, Wentworth Institute and Lowell Institute. Associated with the oilheating industry since 1936, he was service manager and chief engineer of a large wholesale and retail fuel and heating equipment concern for 11 years; was treasurer of his own service and heating equipment company and, for the last three years, was field engineer for Eureka Williams Corp.

The executive committee for Course M is headed by Charles B. Stone, New England OHI vice-president, and includes Harold Davies, George W. Pickering Co., Salem, Mass.; R. E. Eldridge, Oil Heating Supply Co., Framingham, Mass.; Frank Scully, the Scully Signal Co., Melrose, Mass.; Ralph Dennis, Boston Machine Works, Co., Lynn, Mass.; Sidney Horton, Heating Equipment Center, New Haven, Conn., and Joseph Olney, Olney & Payne Bros., Pawtucket, R. I.

Local committee chairmen are Donald G. Clark, Worcester, Mass.; The Staff Bros., Claremont, N. H.; William W. Macurda, Concord, N. H.; George Wingate, Augusta, Me.; Edward T. Lord, Dover, N. H.; C. Everett Elliott, Salem, Mass.; Ray Eldridge, Framingham, Mass.; E. Raymond Taylor, Hyannis, Mass.; Mrs. C. Y. Woodbury, Quincy, Mass.; Charles McAlpine, Malden, Mass.

Newly-formed Jersey Group names committee Chairmen

APPOINTMENTS of committee chairmen of the newly-organized Master Heating & Cooling Association of New Jersey have been announced by A. N. Pierce, of Reliable Fuel Oil Supply, Cranford, president.

They include William McLaughlin, Middlesex County, nominating; Harold Hauch, Camden, finance; Lou Markette, Middlesex, publicity; Jack Madison, Union, time and place; John M. Sibarium, New York, education; Edward Brugler, Morris, convention; Jerry Falkner, Camden, codes; Kenneth Young, Essex, seals; William Sammis, Bergen, installation Manual, and Irving Ahlbaum, Essex, liaison committee.

Charter membership in the organization closed with the July 17 meeting in the Elks Club, New Brunswick.

Purpose of the association is "to benefit and protect the industry and the public which uses heating and cooling equipment." Membership is open to all persons in the heating and cooling industry with active membership for dealers at the retail level and associate membership for wholesalers, distributors, representatives and others in allied fields interested in supporting the industry.

Chicago Oil Burner Association marks Anniversary with Outing

THE CHICAGO Oil Burner Association celebrated its 25th anniversary with a golf party and dinner, June 28, at the St. Andrews Golf and Country Club.

Each foursome was awarded a prize and there were door prize drawings for non-golfers. The Burning Oil Distributors Association, Chicago, also attended the Outing.

Wm. H. ELDRIDGE can change all that for you—

take off the pressure

USE OUR

Streamlined FUEL OIL BUDGET PLAN

More than 1000 DEALERS are using our complete service! We include everything from a presentation to your customer down to the Agreement Forms and those Coupon Remittance Packets that make it so easy and convenient for your fuel oil customers to mail their "Regular" payments.

A complete, reasonably priced, package deal. Cuts office details - - Saves time and trouble.

Write us for Details

25 YEARS PROMOTING OUR OIL HEAT INDUSTRY

WM. H. ELDRIDGE

Advertising Service

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NEW ROCHELLE
NEW YORK

OHI Films on Installation, Service in great Demand

THE DEMAND for film strips on oil heat service and installation offered by the Distribution Division, Oil Heat Institute of America, Inc., New York 36, N. Y., has been so great that the initial supply of three of the seven was sold out overnight and the supply of the remainder considerably depleted.

Additional copies are being made and four of the seven are available immediately. Copies of the remaining three will be available shortly. The film strips, supplied to OHI by members of the Accessory Division, sell for $30, including sound tape, or may be rented for $12.50 per showing. A full set of seven can be purchased for $175.

The series includes the following films:

1) "Nozzle Servicing and Operation:" A 32-minute film, in color, covering operation, function and servicing of high pressure oilburner nozzles.

2) "Breakthrough for Profit:" Forty-two minute strip, in color, telling the story of four heating oil and equipment dealers who increased efficiency and reduced costs by mechanizing office procedures.

3) "Lady in Distress:" Technical film, in color, on service and installation procedure involving Minneapolis-Honeywell controls; also covers wiring of complete systems for hot water, steam or warm air.

4) "Pump Servicing and Installation:" Twenty-five-minute strip, in color, covering all phases of servicing and installation of Webster pumps, also dealing with hook-ups for one and two pipe systems.

5) "Pump Servicing and Installation:" Thirty-five-minute color film strip dealing with Sundstrand pumps and covering all phases of servicing and installation of one and two pipe systems as well as simplified explanation of the principles of hydraulics involved with high pressure oilburner pumps.

6) "It All Depends on You:" Twenty-five-minute color film covering service and installation of General controls with special emphasis on the primary control.

7) "Humidifiers:" Twenty-two-minute, black and white strip on the function and sale of humidifiers. Presents simplified explanation of humidity and presents a story on profits and additional comfort obtained by increasing the sale of humidifiers.

By August 1, OHI reports, 13 Distribution Division chapters and a number of oil companies have purchased prints of the promotional sound film, "Housewarming Party." Prints are available to OHI members for $150; to non-members, for $192.

New York heating Group has golf Tournament; field Day

THE NEW YORK Oilheating Association had its annual golf tournament and field day, June 21, at the Engineers Club, Roslyn, N. Y.

Souvenirs of the day were donated by Joseph L. Farrell, Island Petroleum. Members of the entertainment committee were Arthur Bierman, H. Layman, Joseph L. Farrell, president of the Association, and Philip H. Schepp, executive secretary.

Oil Equipment Jobbers list annual Show on Sept. 23-25

A NATION-WIDE show on innovations and improvements in petroleum handling equipment, which is sponsored annually by the National Association of Oil Equipment Jobbers, will be held in Pittsburgh, Pa., Sept. 23-24-25.

Nat'l Petroleum Assn. meets this Month in Atlantic City

THE 54TH ANNUAL MEETING of the National Petroleum Association is being held September 12-14 in the Hotel Traymore, Atlantic City. General sessions and group meetings are open to all attending the meeting.

N. C. Oil Jobbers Association plans Fall Convention Oct. 14

THE ANNUAL meeting of the North Carolina Oil Jobbers Association will be combined with the Fall convention and will be held in Pinehurst, Oct. 14 to 17.

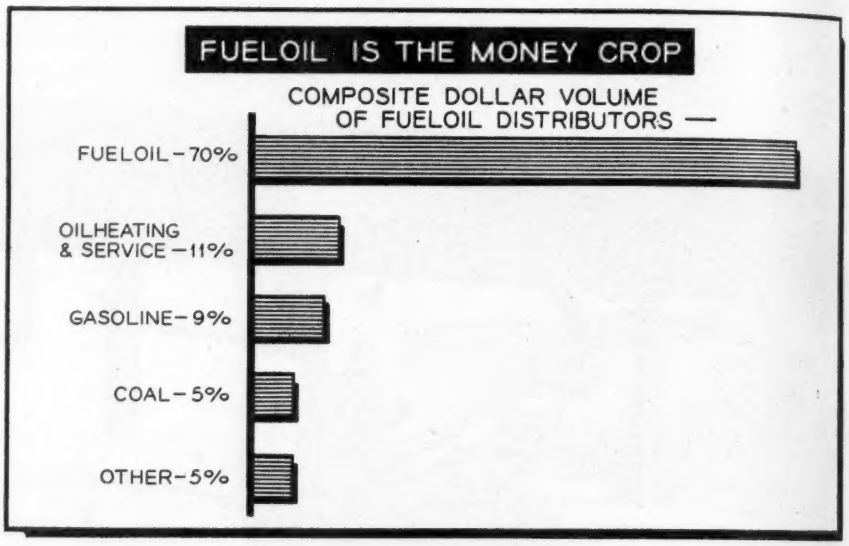
(*Please turn to page 142*)

Our Pipeline is on Wheels

Fueloil Business keeps growing

The Season of 1955-56 showed the best Volume, Prices and Profits

by
Robert Gray



THE FUELOIL AND OILHEATING INDUSTRY has been quite phenomenal in its rate of expansion following World War II. There are three times as many families enjoying the blessings of oil heat today as there were when the Japs threw in the sponge.

This extraordinary growth has been achieved in spite of the vigor of competitive fuels, with gas particularly having grown to formidable size during those same years. In some parts of the United States the fueloil distributors are being hit hard by this competitive pressure . . . not so much in loss of old customers, as in some slowing down of their growth rate. These are important and serious situations, and they are being intelligently approached through co-operative promotional ventures in a lot of markets.

However, in spite of these problems or growing pains, the sale of fueloil keeps moving up sharply with each passing season. In TABLE 1 we see that the growth rate of the several hundred fueloil distributors who assisted in this study was 15% over the previous season. The table also shows that in the 1954-55 season it was 10% above the one preceeding that. This is based on the number of gallons sold for central heating mostly in homes.

The 15% growth rate for this group of reporting companies is a little above the industry as a whole. The fueloil distributors willing to give time and thought to an analysis of this kind naturally are those with some public spirited leanings so they are a little above average in size. This ties in with the fact that there is a growing tendency in some areas for larger fueloil distributors to buy up the business of smaller ones.

Notice in the table that the largest growth in gallonage occurred in the metropolitan New York area and other Mid-Atlantic states. It was here that we experienced the coldest winter.

While on the subject of growth rates we decided to try for the first

TABLE 1

Growth Rate Up 15%

	Large Cities	*Medium Cities*	*Small Cities*	—ALL CITIES— *1955-6*	*1954-5*
New England	22	15	15	17	10
Metro. New York	19	..	..	19	10
Other Mid-Atl.	26	14	17	21	12
South Atlantic	16	8	19	11	10
Midwest	12	7	5	10	8
Pacific	12	9	10	10	11
ALL SECTIONS	18	11	13	15	10

TABLE 2

Fueloil Distributors report how Customers have increased since the 1952-53 Season

	Large Cities	*Medium Cities*	*Small Cities*	*All Cities*
New England	83%	26%	42%	47%
Metro. New York	45	..	..	45
Other Mid-Atl.	44	32	48	44
South Atlantic	38	45	32	43
Midwest	44	27	38	38
Pacific N. W.	55	23	23	34
ALL SECTIONS	51%	30%	41%	42%

They forecast: Customers will be greater at the end of three years by:

New England	72%	25%	20%	40%
Metro. New York	30	..	..	30
Other Mid-Atl.	26	19	25	24
South Atlantic	20	32	23	29
Midwest	26	21	19	24
Pacific N. W.	23	16	16	18
ALL SECTIONS	34%	21%	25%	26%

Not all the growth in the past three years has been typical market growth. Several reporting companies have been buying up smaller competitors.

time this year a couple of questions that would give us a broad look into the degree of optimism among the fueloil distributors. We asked them to tell us what growth they have had in number of domestic heating customers during the past three years, or since the season of 1952-53. The results are shown in TABLE 2.

We see that these typical co-operating companies have 42% more customers today than three years ago. This is greater than the growth of the industry as a whole, and it is somewhat influenced by the same factor we mentioned in an earlier paragraph —that a number of larger fueloil men have been buying up smaller outfits. Notice how very little variation there has been on this point between the several sections of the country.

We then asked the group to give us an estimate of what they think their growth will be during the next three years. The lower portion of TABLE 2 shows that they believe they will be 26% larger by the summer of 1959.

At first glance this would look like they don't expect to grow nearly as fast in the next three years as in the last. On the other hand, it is easier to see that the 42% past growth was based on a much smaller number of customers at the start than is their 26% future projection from their larger customer list of today.

Stated another way, for every 100 customers they had three years ago, they now have 142; and looking down the road three years ahead, they expect to have 179. That means that where they added 42 customers in the past three years they expect to add 37 in the next three years. This would indicate a rate of installations only a little below what they have been experiencing, but naturally the percentage growth rate is lower in actual digits.

It is interesting to note that the large city markets have had the best record and make the strongest forecasts. The medium-sized cities oddly enough make the weakest showing on both points.

In TABLE 3 we show primarily the scope of this analysis by geography and by characteristics of the co-operating companies. The geographic balance is reasonably good as compared with the actual market, with New England a little heavy and metropolitan New York correspondingly light. We have an excellent spread on company sizes where we show the percentage of companies having total customers in four brackets. It is interesting to notice that three-eighths of the

TABLE 4

Fueloil Distributors Specialize

	PERCENT OF TOTAL DOLLAR VOLUME					
	Fuel-oil	*Heating Eqpt.*	*Burner Service*	*Gaso-line*	*Coal*	*Other*
NEW ENGLAND						
Large Cities	74	11	4	6	2	3
Medium Cities	68	11	4	..	11	6
Small Cities	60	12	4	13	7	4
All Cities	68	11	4	5	7	5
MID-ATLANTIC						
Metro. New York	82	6	5	..	1	6
Other Large	63	7	7	8	10	5
Medium Cities	48	8	3	13	15	13
Small Cities	48	8	3	27	6	8
All Cities	66	7	5	9	6	7
SOUTH ATLANTIC						
Large Cities	78	12	10	..	..	..
Medium Cities	74	4	1	9	8	4
Small Cities	40	2	1	45	..	..
All Cities	72	6	3	11	6	2
MIDWEST						
Large Cities	79	6	2	6	1	6
Medium Cities	59	5	2	20	7	7
Small Cities	47	2	1	48	1	1
All Cities	72	5	2	13	2	6
PACIFIC NORTHWEST						
Large Cities	87	4	2	..	1	6
Medium Cities	83	2	1	12	2	..
Small Cities	70	1	1	21	5	2
All Cities	84	3	1	7	2	3
U. S. ALL CITIES	70	7	4	9	5	5

TABLE 3

Who helped in the Study?

	—VOLUME PERCENT—	
	Cooperating Companies	*Actual Market*
New England	24%	17%
Metro. New York	11	18
Other Mid-Atl.	21	23
South	7	6
Midwest	26	27
Pacific	11	9
	100%	100%

SIZE OF COOPERATING COMPANIES

Number of Customers No. 2 Oil	*Percent of Companies*	*Percent of Total Volume*
Under 500	38%	8%
500 to 999	23	11
1,000 to 1,999	21	21
2,000 and over	18	60
	100%	100%

	THIS PERCENT OF COMPANIES
Sells No. 2 Fueloil	100%
Kerosene, No. 1	68
Sells #4 or #5 Residual	26
#6 Residual	14
Sells Gasoline	36
Coal	20
Oilheating Equipment	58

TABLE 5

Fueloil Distributors sell and service Oilheating

	Percent who sell Oil-heating	*Avg. No. Burners sold*	*Percent who service Oil-heating*
New. Eng.	81%	77	90%
Metro. N. Y.	82	70	98
Other M-Atl.	64	52	80
South Atl.	35	24	41
Midwest	36	51	42
Pacific N. W.	26	23	35
ALL SECTIONS	58%	56	68%

Sectional Vitality in oilheating Sales

	Average Burner sales per Company	*Ratio to their fueloil Customers*
New England	77	1:18
Metro. New York	70	1:39
Other Mid-Atl.	52	1:17
South Atlantic	24	1:36
Midwest	51	1:15
Pacific Northwest	23	1:35
ALL SECTIONS	56	1:24

TABLE 6

How Large are the Companies?

Customers	New Eng.	Metro. N. Y.	Other Mid-Atl.	South	Mid-west	Pac. N. W.	All Sec.
No. 2 Residential	1,168	1,514	1,126	1,099	1,170	1,981	1,311
No. 2 Com'l-Apt.	92	126	117	29	60	45	87
Kero, No. 1	234	53	167	742	372	731	277
No. 4-5 Residual	30	90	2	16	40	55	39
No. 6 Residual	26	73	84	..	8	5	43

	Large Cities	Medium Cities	Small Cities	All Cities
No. 2 Residential	2,036	1,274	493	1,311
No. 2 Com'l-Apt.	99	116	33	87
Kero, No. 1	403	324	160	277
No. 4-5 Residual	78	22	5	39
No. 6 Residual	48	6	6	43

TABLE 7

Colder Winter raised average Consumption

AVERAGE GALLONS PER CUSTOMER	New Eng.	Metro. N. Y.	Other Mid-Atl.	South Atl.	Mid-west	Pac. N. W.	Sec. All
Residential, No. 2 Oil	1,689	2,142	1,533	1,156	1,338	1,112	1,556
Com'l-Apart., No. 2 Oil	8,943	6,138	4,767	2,631	3,676	3,550	5,191
Comb. Types, No. 2 Oil	2,086	2,312	1,814	1,202	1,403	1,129	1,741
Kero., No. 1 Oil	960	369	915	547	903	873	795

companies had under 500 customers, but accounted for only one twelfth of the total volume.

At the other end of the scale fewer than one-fifth of the companies have three-fifths of the business.

In the third segment of this table we show that while every co-operating company sold No. 2 fueloil, a smaller percentage was active in marketing other somewhat related products. This comes out in better detail in TABLE 4 where we analyze the total dollar volume of all of these companies by general designation of products sold. For example, the New England fueloil man for each $100 billing has $68 in fueloil, $11 in oil-heating equipment, $4 in burner service, $5 in gasoline, $7 in coal and the remaining $5 in miscellaneous products, quite often airconditioning.

When we look at the country as a whole, we see that 70% of the industry's retail dollar volume is in fueloil, compared with 11% in heating equipment and service. This does not mean that the heating department is insignificant, but rather that fueloil volume is extremely large. In this past season, for the first time in the industry's history the sale of distillate furnace oils passed the $2 billion mark. From that we can see that the fueloil distributors' heating equipment and burner service departments had a billing of more than $322 million.

This table also carries an interesting revelation of the depth of gasoline among fueloil distributors. Back in TABLE 3 we noticed that 36% of the co-operating companies sell gasoline, but here we see that gasoline and TBA items represent just 9% of the group's dollar volume.

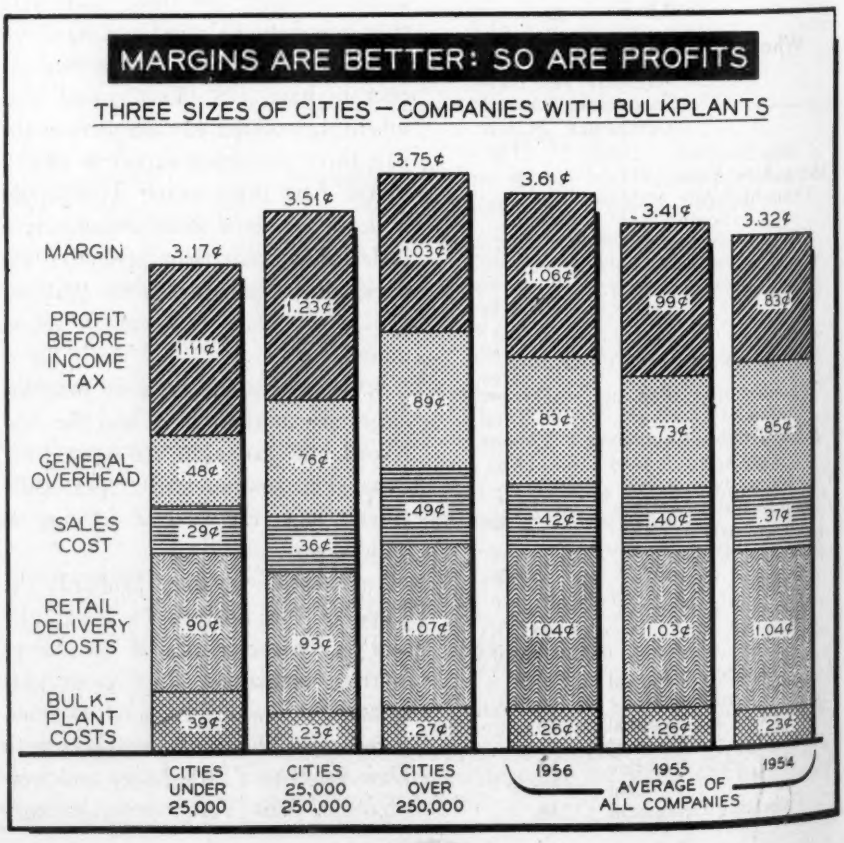
Fueloil across the board sells at about 14¢ per gallon; gasoline, without the tax, averages just under 24¢. The quantity of gasoline sold is 110% more than that of distillate furnace oil. Thus, the dollar volume of gasoline alone at the retail level and not including tax is three-and-one-half times that of fueloil of the industry as a whole. Yet we find these typical fueloil distributors selling only one-eighth as much gasoline as they do fueloil.

A lot of oil marketers sell both products, naturally, but if they are strong in fueloil, they are inclined to be light in gasoline and vice-versa. The combination fueloil and gasoline marketer comes nearest to being a reality in small cities where they need

TABLE 8

Companies with Bulk Plants

	—PERCENT OF COMPANIES— No. 2 Oil	Kero, No. 1	Residual
New. Eng.	66	60	10
Metro. N. Y.	52	30	15
Other M-Atl.	80	71	6
South	82	76	..
Midwest	97	92	12
Pacific N. W.	74	67	10
ALL SECTIONS	75	67	11



the combined product volume to make a business. But in the industry as a whole there's not too much community of interest between the two product lines.

We find in TABLE 5 the degree of oilheating interest among fueloil distributors. We see nationally that 58% of them sold oilheating equipment during the past season, and 68% had their own oilheating service departments.

In the second portion of this table we see that fueloil distributors on the whole sold one new oilheating installation for each 24 existing oil customers on their books. This discloses the fact that they installed 344,000 jobs, not in the calendar year, but in the fiscal year for fueloil distribution which runs from July through the next June. In the past heating season or fiscal year our monthly estimates totaled 788,284 oilheating installations, so the fueloil distributors accounted for 44% of that business.

This is probably a little on the low side based on other sources of information. The organization known as Oilheating Market Reports, New York, (a staff supported by the major oil companies to analyze fueloil markets for advertising programs) gets a higher figure on this. They have made fairly complete surveys of 36 metropolitan markets east of the Rockies and found that 51% of the oilheating installations were made by fueloil distributors. The smaller towns probably account for our lower figures, plus the fact that our study is national in scope while the other doesn't include Western areas.

TABLE 9

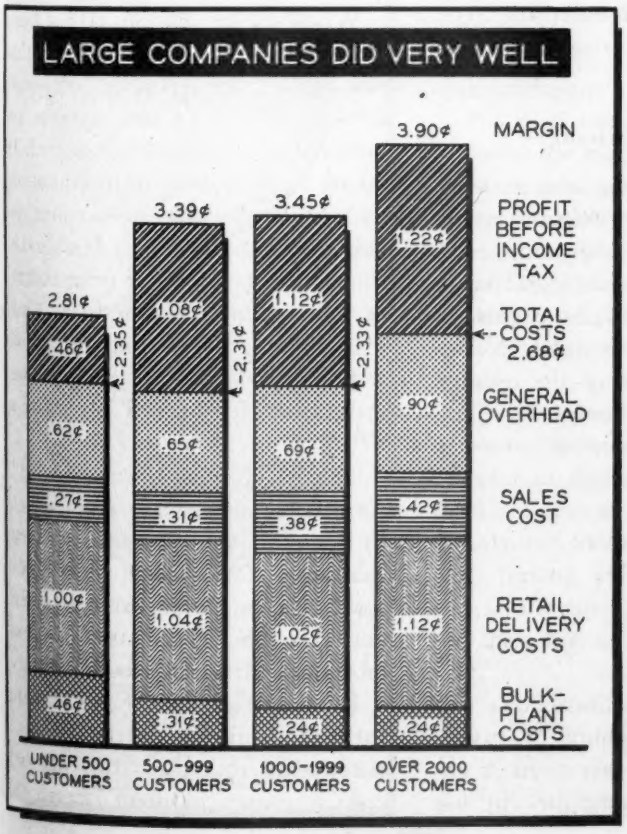
Fueloil Margins No. 2 Oil in Cents per Gallon

	—WITH BULKPLANT—			—WITHOUT BULKPLANT—		
	Large Cities	*Medium Cities*	*Small Cities*	*Large Cities*	*Medium Cities*	*Small Cities*
New England	4.11	3.68	3.51	3.75	3.52	3.13
Metro. New York	3.72	..	..	3.51	..	..
Mid-Atlantic	3.46	3.21	2.91	3.13	2.63	2.86
South Atlantic	..	3.48	..	..	..	..
Midwest	3.81	3.51	3.18	3.20	..	..
Pacific Northwest	4.02	4.50	3.61	4.12	4.00	..
All Sections	3.75	3.51	3.17	3.33	3.04	2.94

TABLE 10

Profit before Income Tax 1.06¢ per Gallon; last year .99¢

	New Eng.	*Metro. N. Y.*	*Other Mid-Atl.*	*South Atl.*	*Mid-west*	*Pac. N. W.*	*All Sec.*
Bulkplant Cost	.24¢	.22¢	.30¢	.29¢	.28¢	.18¢	.26¢
Delivery Cost	.90	1.22	.87	1.24	1.05	1.16	1.04
Selling Cost	.45	.52	.38	.77	.29	.45	.42
General Ovehhead	.76	.88	.73	.77	.83	1.20	.83
Total Cost	2.35	2.84	2.28	3.07	2.45	2.99	2.55
MARGIN WITH BULKPLANT	3.73	3.72	3.19	3.48	3.69	4.05	3.61
PROFIT	1.38	.88	.91	.41	1.24	1.06	1.06
MARGIN WITHOUT BULKPLANT	3.61	3.51	2.91	..	2.92	4.04	3.29
PROFIT	1.50	.89	.93	..	.75	1.23	1.00



The figures in TABLE 6 are intended primarily to show the importance of the different types of customers. When we think of oilheating with middle distillate or No. 2 fueloil, we visualize residence. Here though we see that, while the typical fueloil distributor has 1,311 residential accounts, he also has 87 small commercial accounts using the same fuel and the same general type of oilburner.

The result of this is apparent in TABLE 7 where we see that the average residential customer used 1,556 gallons of fueloil last season, and the small commercial building or small apartment house used 5,191 gallons of the same oil. This brings out the fact that the average No. 2 oil account was good for 1,741 gallons across the industry as a whole.

Before we dismiss TABLE 6 we should note that, where we show kerosene and residual customers per company, this applies only to those specific companies that sold those products . . . in the case of kerosene, 68% as we saw back in TABLE 3 where we also noted the popularity of the other products.

Quite a few fueloil distributors throughout the country do not operate their own bulkplants. A lot of oil men have referred to such companies as "peddlers," but those oil men are not too familiar with all types of distribution. In a number of eastern seaboard markets most bulkplants are on tidewater with large capacities for receiving and storage so they are too costly for typical fueloil men. Many of the

largest fueloil distributors in these cities load their trucks at these terminal plants, some operating as many as 25 to 30 trucks. TABLE 8 shows by geographic areas the per cent of fueloil companies having their own bulkplants.

In earlier years we've also added to this table the average storage capacity of these plants. The figures on that point have not been too dependable because in some years we would have more co-operating companies with extra large plants than we would have in other years. Often these very large plants do a combination retail and wholesale business so there was always some distortion. This year we were less satisfied than ever with this particular group of figures so decided to omit any estimates of average storage capacity.

Margins are up

Fueloil margins on the average have moved up rather substantially from what they were at this time last year. This is particularly true in large cities and where the fueloil marketer has a bulkplant. In fact, margins improved in cities of all sizes for companies with their own bulkplants.

For companies without bulkplants, we found only those in large cities had their margins raised. Our study showed a small shrinkage in margins for non-bulkplant companies in the medium and smaller cities. TABLE 9 gives you this in detail.

TABLE 10 shows us that while margins were going up during the year operating costs did not increase as rapidly, so profits were higher. The average net profit before income tax from all reporting companies was 1.06¢ per gallon, where it had been .99¢ per gallon the year before. The individual sections of the country show some considerable variation in costs.

TABLE 11

Nearly half use bracket Pricing

	Percent of Companies allowing Discount
New England	61%
Metro. New York	59
Other Mid-Atl.	18
South Atlantic	6
Midwest	40
Pacific Northwest	91
ALL SECTIONS	45%

TABLE 12

Tank Sizes for No. 2 Oil Customers

PERCENT OF ALL TANKS	*New Eng.*	*Metro. N. Y.*	*Other Mid-Atl.*	*South Atl.*	*Mid-west*	*Pac. N. W.*	*All Sec.*
200-300 Gallons	87	71	81	51	75	69	76
550 Gallons	7	21	12	31	18	6	16
675 Gallons	1	2	1	1	1	21	3
1,000 or Larger	5	6	6	17	6	4	5
AVER. SIZE GALS.	340	390	362	505	378	408	380

In the two charts the operating costs, margins and profits are given a visual presentation which is quite enlightening. We find the highest average profit to be in medium-sized cities. In the other half of the chart the best profit is found in the companies who average better than 2,000 customers.

It is important, here, to understand that in the column representing "over 2,000 customers" the average number of customers was considerably above that. That is why we get such a significant jump in the margin rate over the column alongside. In fact, in the largest classification there were occasional companies running over 20,000 customers.

One of the more surprising situations disclosed by this chart is that there were almost no differences in total operating costs between the first three sized groups. The smallest companies had very high bulkplant costs, but they were able to offset this by other economies.

Bracket Pricing

The idea of having two or more prices on the same product to encourage customers to use large tanks seems to be making considerable headway. In TABLE 11 we show the popularity of this practice by sections. Notice that for all sections of the country we find 45% of the companies selling at a lower price where the customer has a tank large enough to take an economical delivery. In some areas the upset point is 400 gallons and in some areas 300 gallons. The general idea, though, is that a customer with a 550 gal. storage deserves a half cent saving in cost.

A lot of fueloil distributors still question the advisability of having two prices because they think it encourages smaller companies to use the lower of the two prices regardless of the storage capacity. One thing is fairly certain . . . the wider adoption of bracket pricing is not causing much change in the buying habits of homeowners. We see in TABLE 12 that the average tank capacity of oilheating customers is 380 gallons, which is very little different from the 398 gal. average in a study last year.

TABLE 13

Half of Distributors are satisfied with Margins

	DISTRIBUTORS' OPINION		
	All Right	*Too Low*	*Too High*
New England	48	50	2
Metro. New York	59	36	5
Other Mid-Atl.	38	60	2
South Atlantic	44	56	..
Midwest	51	43	6
Pacific Northwest	65	30	5
ALL SECTIONS	50	47	3

While we're still on this subject of economics we see in TABLE 13 that just half of the reporting companies think that their present margins are satisfactory, everything considered. In asking for an answer to this question, we told them to take into account not only their need for profits, but also the competitive problems of price cutting as well as cost of other fuels. Only 3% of the co-operating companies would go so far as to say that their margins are too high. The remaining 47% consider them too low.

This whole thing is something of a surprise in view of the attitude held by some marketing officials in large companies that fueloil distributors have only one thing to talk about, "more margin." This TABLE 13 demonstrates a rather judicious attitude.

In the tables and charts showing the cost of fueloil distribution it is noteworthy that the actual delivery cost is quite consistent across the

board; also notice that it does not increase much with the years. The reason is obvious. The wage rates for truck drivers have been mounting steadily, but at the same time the average truck size has been rising, and overall efficiency has improved correspondingly.

In TABLE 14 we show truck driver wages not only by geographic areas, but also by sizes of cities. It is important to understand that where we show two grades of men, which we identify as "best men" and "lowest," it does not mean that we take the highest and lowest in the entire study . . . rather it means that these are the averages of high and low figures given us by individual companies.

TABLE 14

Truck Driver Wages

	Large Cities		Medium Cities		Small Cities	
	Best Men	*Lowest*	*Best Men*	*Lowest*	*Best Men*	*Lowest*
New England	$1.87	$1.81	$1.85	$1.72	$1.61	$1.45
Metro. New York	2.53	2.30	..	..	..	..
Other Mid-Atl.	1.94	1.76	2.03	1.68	1.77	1.54
South	1.50	1.15	1.32	1.09	1.09	.97
Midwest	2.25	2.09	1.92	1.69	1.82	1.65
Pacific Northwest	2.43	2.43	2.01	1.93	2.15	2.02
1956 ALL SECTIONS	2.14	1.98	1.93	1.68	1.75	1.56
1955 ALL SECTIONS	1.91	1.72	1.70	1.49	1.65	1.36
1954 ALL SECTIONS	1.97	1.80	1.75	1.65	1.77	1.62
1953 ALL SECTIONS	1.76	1.47	1.53	1.37	1.58	1.49

We find higher wage rates for truck drivers this year over last in each of the six columns of the table. This is particularly significant because the averages last year surprisingly were lower than the year just prior to that. In thinking of driver wage rates, as a whole, it is more nearly correct to use only the figures given for the best men since those are the mature drivers and since you expect the lower paid men to eventually reach that top level.

If we take only the best men in the three sizes of cities we find them now earning $1.96; a year ago they were earning $1.77 an hour, which was quite diffierent.

For quite some time we have been showing the industry the relationship between driver wage rates and fueloil margins; we've done this with the belief that margins should be based on driver wage rates, because these wage rates are a very good index of the total cost of doing business in a specific market.

If we take the average margin shown in this study of 3.61¢ and divide it by the average wage rate of $1.96 we arrive at a figure of 1.84. As a general rule, then, we can say that, when an individual fueloil distributor finds that his margin in cents per gallon is 1.84 times his driver wage rate indollars per hour, he has an even chance with all other marketers to make a profit of the average figure or 1.06¢ a gallon. If his margin is lower than that average, or if his driver wage rate is higher, he will have less chance of making that typical profit ratio.

TABLE 16

More customers per truck with larger companies

Companies with	*Average customers per truck*
1 truck	231
2 trucks	263
3 trucks	269
4 trucks	311
5 or more	307

We mentioned a moment ago that delivery costs were being held down from year to year by the average size increase in trucks. No two markets have the same requirements for rolling stock, but in general the larger trucks deliver more gallons of fueloil per dollar than the smaller ones just because they need fewer trips back to the source for filling.

The present ratio of truck sizes is shown in TABLE 15, it's also made more visual in the accompanying chart. Today only 38% of the trucks have fewer than 1,500 gallons capacity, while this

TABLE 15

Truck Sizes by Areas

	Under 1,000 Gals.	*1,000-1,499 Gals.*	*1,500-2,499 Gals.*	*2,500 & Up Gals.*	*Semi-Trailers*
New Eng.	6%	27%	34%	26%	7%
Metro. N. Y.	2	10	37	44	7
Other M-Atl.	5	32	34	9	20
South	20	61	6	..	13
Midwest	11	30	42	7	10
Pacific	14	55	24	1	6
ALL SECTIONS	8%	30%	34%	17%	11%

FUELOIL TRUCKS ARE GETTING LARGER

PERCENTAGE OF EACH SIZE GROUP IN THREE YEARS —

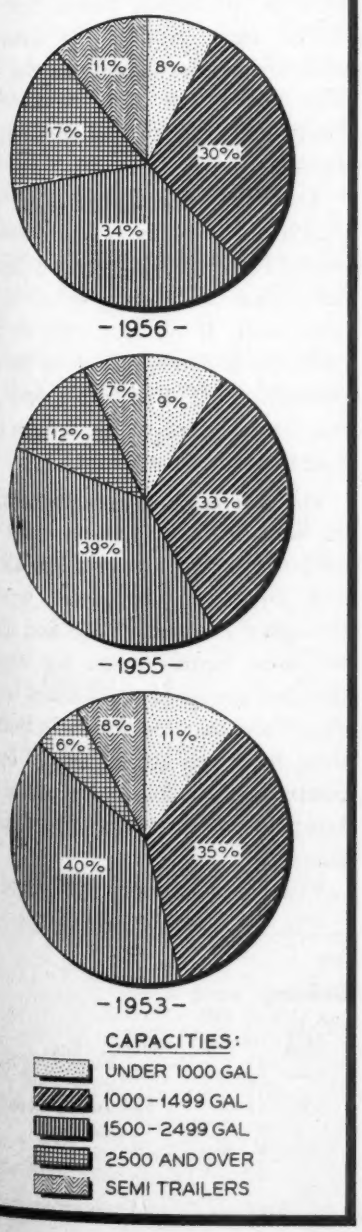


TABLE 17

Truck Operating Details

	Large Cities	Medium Cities	Small Cities	All Cities
TRUCKS OPERATED PER DISTRIBUTOR				
No. 2 Oil	6.6	4.2	2.3	4.6
Kero., No. 1 Oil	1.6	1.4	1.2	1.4
Residual Oil	4.0	1.2	1.1	2.3
Over-the-road Transports	4.5	1.4	1.5	2.7
All Types	9.9	5.8	3.8	6.8
CUSTOMERS SERVED PER Truck, No. 2 Oil	321	341	212	294
AVERAGE GALLONS PER DROP				
No. 2 Oil	209	216	209	211
Kero., No. 1 Oil	112	83	97	99
No. 4-5 Residual	..	..	..	2563
No. 6 Residual	..	..	..	3376

was 46% only three years ago. It's hard to know how far this trend will go, but certainly it continually moves toward larger sizes. The average size today for conventional sized trucks has reached 1,801 gallons.

Going beyond the conventional fueloil delivery unit we see in the last column of the table that 11% of all fueloil trucks are semi-trailers. It is well known that most of these are used in long distance service, but still we have individual cities like Chicago and Buffalo where they are quite common in retail deliveries because the more conspicuous companies use them. To our considerable surprise fully one-fourth of the co-operating marketers have at least one semi-trailer. It was only three or four years ago that we had this same figure at 19% of the companies. Quite clearly the trend is accelerating.

In general the average truck size increases with the average company size—the reasons are obvious. The larger company can better afford to invest ten to twelve thousand dollars in a new unit than can the smaller ones. Again the larger company is adding customers at a faster rate so it can better take a chance on the greater investment. TABLE 16 demonstrates this point rather dramatically.

The companies with only one or two trucks serve considerably fewer customers per truck than do the larger companies. The ratio on this is not exactly serene, but there is only one spot in the figures that disputes this conclusion. In studying this part of the analysis where we are able to multiply the number of customers per truck by the average gallons per customer (TABLE 7) we see that the one truck operator averaged 402,000 gallons, while the five truck operators averaged 534,000 gallons per truck during the season.

The average of all reporting companies is slightly over a half million gallons per truck delivered last season.

Trucks per Distributor

In TABLE 17 we see that the average fueloil distributor owns and operates 6.8 fueloil trucks covering all products. You might notice that this is not the total of all the figures in the last column, rather the kerosene, residual and transport-type trucks are identified only in connection with those specific companies that use them. If we were to add in the last column all of the figures identified with the four general types of product and distribution we would come up with 11 trucks for each fueloil distributor. The fact that they don't all engage in the four activities accounts for our finding a total of only 6.8 trucks.

In the latter part of this same table we see that the average delivery of No. 2 oil is 211 gallons; this compares with 212 gallons in a similar study last year. If we were to think of this only in terms of serving a 275 gallon tank it would be a highly commendable performance. The fact, however, is that they are putting this average 211 gallon drop into an average tank size of less than 400 gallons so it leaves a lot of room for refinement.

One of the continuing problems in the business of fueloil distribution is how to get good drivers for the fall and winter if you lay them off for the slack season. We see in TABLE 18 that

TABLE 18

Holding Drivers through the Summer

	Percent of companies Keep all Men	Percent of all drivers Year Around
New England	21%	44%
Metro. New York	15	36
Other Mid-Atl.	28	61
South Atlantic	35	64
Midwest	20	40
Pacific Northwest	26	37
All Large Cities	14	36
All Medium Cities	16	47
All Small Cities	37	61
All Cities	23%	46%

46% of all fueloil drivers are employed right around the calendar, while in another column of the same table notice that 23% of the companies keep all of their men around the year.

These are good figures if we compare them with some practices in other years. They are also good compared with some individual spots in this table itself. If we look only at large cities, we find one-seventh of the companies keeping all of their drivers, and just over a third of all drivers being held through the summer.

Looking at the geographic sections, the South Atlantic area does best with 35% of the companies keeping all men and 64% of all drivers working through the summer. We find almost the same figures when we measure the total group of small cities wherever they may be located. Both of these situations are influenced by the combination fueloil and gasoline marketer since each product has a seasonal peak.

Possibly as we get into more air-

TABLE 19

Automatic Delivery

	New Eng.	Metro. N. Y.	Other Mid-Atl.	South	Mid-west	Pac. N. W.	All Sec.
Percent of Companies using automatic systems	91	96	90	64	80	80	83
Percent all fueloil users served	84	93	82	48	74	72	80
Percent of fueloil users having auto. fill signals	87	86	72	7	19	1	53

conditioning business the industry will be able to improve this whole picture. Certainly it has a weakness when less than half of its key employees work all year.

We see in TABLE 19 that 83% of fueloil distributors who co-operated in this study use automatic delivery systems and that 80% of their total customers are served in this way. A year ago the comparative figures were 89% of companies, and 78% of their customers. We also conclude from this same table that 53% of all fueloil customers have their oil tanks equipped with fill signals. Notice that these are very widely used in eastern states, rather sparsely used in the rest of the country.

A development of fairly recent years in fueloil distribution is the use of two-way radio. We now estimate that approximately 1,130 fueloil trucks are equipped with this very important device. In addition, approximately 2,314 oilheating service trucks likewise have two-way communication with the companies' dispatchers. The total of such trucks equipped with two-way radio we figure to be 5,444 to compare with last year's figure of 4,282.

Among the unusual questions asked this time is one having to do with power steering in fueloil trucks. This is an item that has been talked about quite a lot in recent times. It is just beginning to take hold on heavy duty trucks for many industries. We estimate that at mid-summer there were 658 fueloil trucks on the streets that were equipped with power steering.

The industry has made surprisingly little headway in budget payment plans for fueloil. In TABLE 20 we put a yardstick on this activity. The number of companies offering monthly payment programs has increased in two years from 66% to 75%. When we look at the number of customers using the budget programs—we get a sense of disappointment. Only 14% of the customers of companies using budget plans are willing to buy the deal.

TABLE 20

Budget payment still lags

	Percent of oil Companies offering Budget Plans	*Percent of their Customers Using*
New England	81%	14%
Metro. New York	82	16
Other Mid-Atl.	82	18
South	35	7
Midwest	67	13
Pacific Northwest	83	10
1956 All Sections	75%	14%
1955 All Sections	69%	15%
1954 All Sections	66%	15%

	Some Customers buy Service on Budget plan
New England	58%
Metro. New York	33
Other Mid-Atl.	31
South	4
Midwest	4
Pacific Northwest	6
ALL SECTIONS	25%

Installments

There are spots here and there where as many as a third of the customers of individual companies pay by equal monthly installments, and in fact there is one company operating both in New York and Pennsylvania that has this happy ratio up to 75%. On the other hand the average figures show that we have a long way to go.

In the lower part of this table (TABLE 20) we find that about one-fourth of all customers using monthly budget plans for fueloil also have burner-service contracts included in the budget payments. This is a long step in the direction of what might be called universal service, where the cost of burner maintenance is embraced in the oil price, but without giving it away.

Back in the analysis of company income of fueloil distributors, we saw that about 4% of the annual dollar take was for oilheating service. There's been a strong impression that fueloil companies lose money on this department. We agree that most of them do—or rather they did during the past heating season. However, 36% made a profit on service, while 64% of the companies showed a loss. The detail of this is in TABLE 21.

If we take first the companies showing a profit, and subtract their profit of $2.29 from their billing of $23.95 we see that their actual operating cost per customer was $21.65. Again, if we take the companies showing service losses and added their losses to their billing per customer we find it cost them $25.50 per customer to render burner service. Part of the justification for the difference in the two groups lies in the fact that the service profit companies had only half as many customers on an average as the companies with service losses.

In some regions difference was even

TABLE 21

Companies with Service Profits

	— PER CUSTOMER —		
	Customers	*Avg. Billing*	*Avg. Profit*
New Eng.	618	$ 9.09	$1.40
Metro. N. Y.	881	24.13	2.20
Other M-Atl.	749	28.14	2.62
Midwest	2,088	30.62	3.11
Pacific N. W.	1,404	20.96	.86
U. S. Average	1,197	$23.95	$2.29

Companies with Service Losses

	— PER CUSTOMER —		
	Customers	*Avg. Billing*	*Avg. Loss*
New Eng.	2,571	$19.26	$3.78
Metro. N. Y.	6,209	33.38	3.93
Other M-Atl.	677	13.34	3.46
Midwest	797	16.31	6.32
Pacific N. W.	780	33.78	3.72
U. S. Average	2,123	$21.05	$4.45

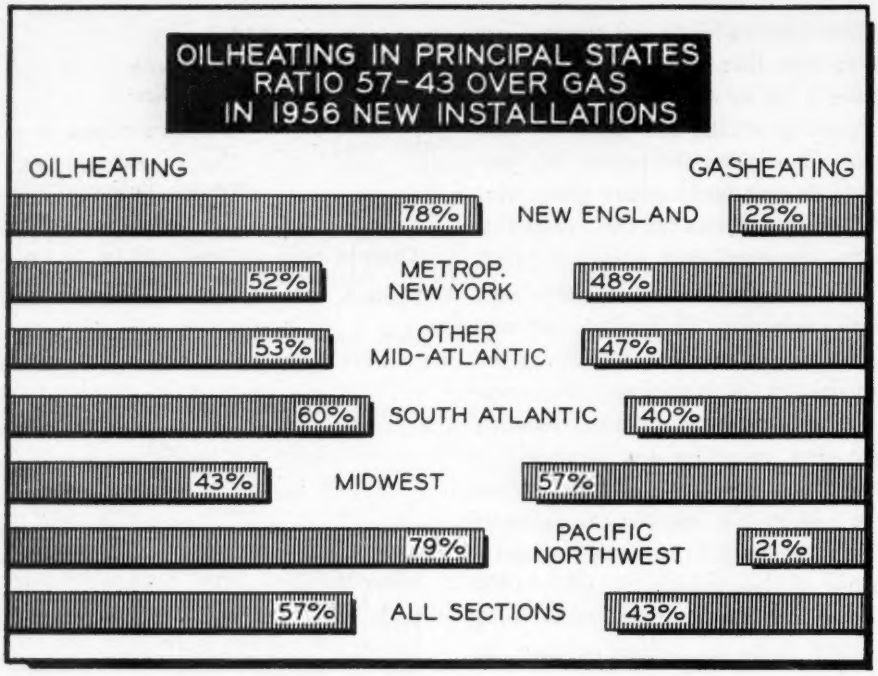
TABLE 22

Brand Selling

	Percent Showing Major Brands	*Their Share Total Customers*
New England	54%	45%
Metro. New York	41	23
Other Mid-Atl.	42	57
South	65	46
Midwest	52	51
Pacific Northwest	62	88
1956 All Sections	50	49
1955 All Sections	48	51
1954 All Sections	53	56
1953 All Sections	53%	53%

Majors' Direct Sales

	Percent of Total No. 2 Fueloil Sold at Retail by Major Companies
New England	22%
Metro. New York	15
Other Mid-Atl.	17
South	31
Midwest	39
Pacific Northwest	12
1956 All Sections	24
1955 All Sections	25
1954 All Sections	22
1941 All Sections	29%



greater. For example, in Metropolitan New York the companies losing money on service had an average of seven times as many customers as those who made money. The reasoning behind these differentials is somewhat obscure, but we intend to work out some correlations from the tally sheets when opportunity affords it.

In the distribution of fueloil one of the considerations for many years has been whether or not to sell under a major company brand. We see in TABLE 22 that 50% of today's fueloil distributors do use major brands on their trucks, and they sell 49% of the total gallonage.

There have been minor variations of these ratios during the past several years as the table shows, but in general the trend is slightly downward. In that same table we see that 24% of No. 2 heating oil was sold at retail by major companies last season. This means that the other 76% was sold to the consumers by independent fueloil distributors. There are significant geographic variations, but the total implications have seen little change in recent years.

A handful of large independents has been bought by major companies, particularly in the past two or three years. These changes, however, have had only a minor effect.

The degree of advertising by fueloil distributors is set forth in TABLE 23. Approximately 90% of the cooperating companies advertised fueloil during the past season. They spent $1.56 on advertising for each fueloil customer currently on their books. If we recognize that the typical fueloil customer spent about $240 for oil last season, this advertising figure only represents two-thirds of 1% of total billing.

In the second part of this table we see that one-third of the co-operating companies put money in joint advertising campaigns with other fueloil distributors. For this they spent 42¢ per customer during the season. This figure is very much in line with the scale of contributions in the Oilheating Market Reports' campaigns where the rate would figure out to about 43¢ per customer or $250 per million gallons.

The sale of gas heating equipment has been greater than oilheating during the past two years, and it probably will be again this year. That is true for the nation as a whole. It's a fact, however, that needs some explanation. Quite a lot of gas heating is sold in southern states where the fuel is very cheap, and where temperatures are moderate so they don't need much of it.

We're showing this year in the magazine a listing by states of new homes being started. In the first four months there were 314,164 such starts and out of that number 143,149 were in the southern area starting at, say, Georgia and angling up to Tennessee and across to California. In that region—where almost no oilheating is used—we found that 46% of the total number of new homes is situ-

TABLE 23

Fueloil Distributors Are Good Advertisers

	—COMPANY ADVERTISING—	
	Percent of Companies that Advertised	*Avg. Spent by them Per Customer*
New Eng.	85%	$2.07
Metro. N. Y.	96	1.91
Other M-Atl.	90	.81
South Atl.	94	1.57
Midwest	91	1.66
Pacific N. W.	85	1.59
ALL SECTIONS	90%	$1.56

	—COOPERATIVE ADVERTISING—	
	Percent of Companies Partici-pating	*Avg. Spent by them Per Customer*
New Eng.	29%	$ .31
Metro. N. Y.	67	.26
Other M-Atl.	24	.38
South Atl.	41	.20
Midwest	9	.69
Pacific N. W.	59	.47
ALL SECTIONS	33%	$ .42

TABLE 24

Competitive fuel Installations

	—PERCENT—	
	Oil	*Gas*
NEW ENGLAND		
Large Cities	76	24
Medium Cities	68	32
Small Cities	89	11
All Cities	78	22
METRO. NEW YORK	52	48
OTHER MID-ATLANTIC		
Large Cities	48	52
Medium Cities	36	64
Small Cities	76	24
All Cities	53	47
SOUTH ATLANTIC	60	40
MIDWEST		
Large Cities	41	59
Medium Cities	40	60
Small Cities	47	53
All Cities	43	57
PACIFIC NORTHWEST		
Large Cities	84	16
Medium Cities	60	40
Small Cities	92	8
All Cities	79	21
ALL SECTIONS		
Large Cities	56	44
Medium Cities	46	54
Small Cities	69	31
All Cities	57	43

ated. Thus, we may lose out to natural gas in total statistics, at least temporarily. But in the areas were oilheating is practical for the climate, it is outselling gas.

This is shown in TABLE 24 and the chart that accompanies it. For this table we asked the co-operating marketers to estimate the ratio of gas and oil installations in their communities this past season. They estimate that 57% of the jobs went to oil and 43% went to gas.

In the competitive processes of the past season we had modest losses to other fuels as shown in TABLE 25.

TABLE 25

Losses to other Fuels

	To Gas	*To Coal*	*Electricity*
New England	5,336	46	162
Metro. N. Y.	6,179	91	..
Other Mid-Atl.	11,697	654	205
South Atlantic	5,435	48	289
Midwest	52,321	1,336	419
Pacific N. W.	1,237	..	4,682
ALL SECTIONS	82,205	2,175	5,757

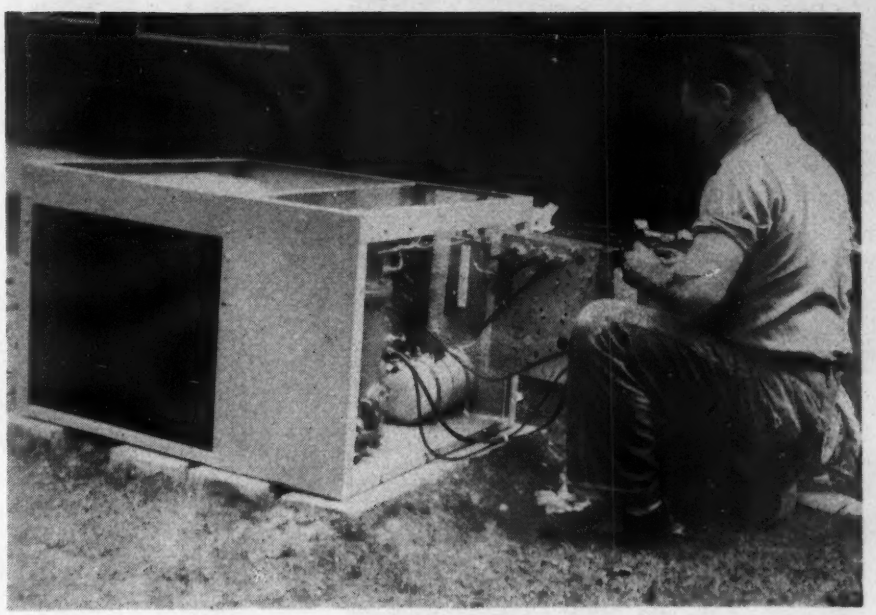
Losses to all Fuels

1956 90,137 or 1.1% of total operating
1955 75,067 or 1.0% of total operating
1954 55,604 or 0.8% of total operating
1953 47,065 or 0.7% of total operating
1952 32,734 or 0.6% of total operating

With a figure of 90,137 this is the first season when they're been higher than 1% of the total oilheating jobs in use. This is actually a very slight deflection because any industry might have 1% of its customers dis-satisfied for a large number of reasons.

Our oilheating losses to other fuels would usually occur with antiquated oilburning equipment that we had not taken the trouble to try and replace. The bulk of these losses might have been avoided if all fueloil marketers had performed like those who made a special effort to sell replacements and keep these customers loyal to oil.

One of the most interesting developments in fueloil distribution is the practice of selling airconditiong equipment in oilheating departments. As an industry, airconditioning has been slow in getting off the ground. Yet, it seems to be picking up very rapidly this year. A lot of able men



in the industry believe that it is now set to move ahead fast.

In TABLE 26 you will notice that 35% of the co-operating companies now sell airconditioning equipment. Even more important is the fact that the dealers believe that it fits well in the oilheating business. One reason is the seasonal nature of cooling sales, coming mainly between April and July when most departments in a fueloil company are slack. Another reason is that it requires fairly intricate installation and service, and the oilheating industry has had a lot of experience in that direction.

TABLE 26

35% of Fueloil Men Sell Airconditioning

	Now Sell	*Dealers feel it fits Oilheating*
New England	71%	74%
Metro N. Y.	24	62
Other Mid-Atl.	45	68
South Atlantic	20	87
Midwest	22	59
Pacific N. W.	9	71
ALL SECTIONS	35%	67%

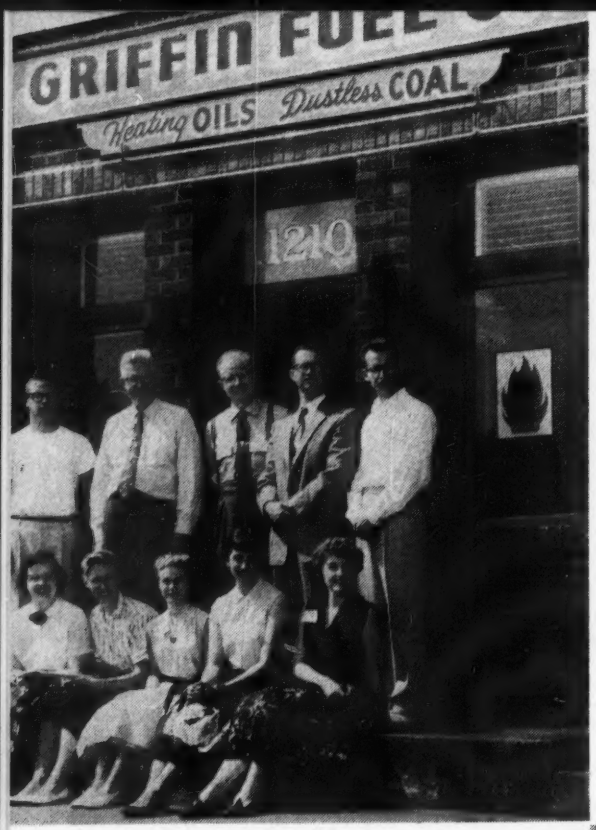
How much cooling was sold by fueloil Distributors?

	Complete Cooling Jobs	*Window Units*
New England	2,038	6,519
Metro. N. Y.	6,726	251
Other Mid-Atl.	2,618	5,808
South Atlantic	1,203	1,058
Midwest	3,170	4,402
ALL SECTIONS	15,755	18,038

In the lower half of this table we see that fueloil and oilheating men sold in the past heating season approximately 15,755 complete cooling jobs, and 18,038 window units. Neither of these figures represents a large share of two segments of the cooling industry, but still they are very significant in the process of getting underway.

One factor is significant here. Several large manufacturers of cooling equipment have been buying large companies devoted to heating products. The implication is that cooling as an industry hopes to dominate heating in the years ahead. If we as an oilheating industry are to go on making headway, we can't let the cooling people steal our show; rather we must build up cooling volume through our own efforts to keep the whole matter in hand.

Looking ahead, the fueloil distributor faces some hard working years to maintain his growth as competition toughens. If he stays alert as a thorough merchandiser rather than being content to coast on present fortune, he should do very well. On the other hand, his easiest days are past, and he has some pretty vigorous selling to do down the road. Yet, any industry with more than $2 billion in retail sales of furnace oils alone, plus another billion in products related by one means or another, ought to be pretty hard to up-root unless it suddenly goes soft, which is not at all likely.



Students *and instructors grouped before Griffin Fuel Co. office include, standing, David Thompson, Frederic P. Griffin, president of the company; Carl Schuman, company's assistant secretary-treasurer; Jack Dolstad, Cleveland High School teacher, and Harry Farris. Seated are Jean Swanson, Donna Kislo, Marlene Williams, Jamma Zingarella and Lorraine Zitz.*

Mysteries *of* PBX *switchboard and proper procedures for handling phone calls are explored by student Jean Swanson, left, and Blanche Miller of Griffin staff.*

"Fuel Dealers for a Day"

AT THE INVITATION of the Griffin Fuel Co., Seattle, Wash., Cleveland High School students recently turned "Fuel Dealers for a Day" to learn first hand what makes a fueloil company tick. Here pictured are typical scenes of their visit, part of a general campaign being conducted to better acquaint the public with the industry.

To instruct the new "dealers," Griffin officers and personnel — from president Frederic Griffin on down—turned teacher.

Each step *in fueloil operation is explained during program. Above, Henry Van Houtee shows Donna Kislow how mechanical change counter works. Left, Fred White instructs Harry Farris in off-set lithography. At right, Lorraine Ritz is shown how to make out daily deposit slip by Renee Johnson.*

Credits *and collections are a vital part of any business. Above, Dorothy Sherwood, Griffin credit manager, explains company procedure for Marlene Williams. Students spent half-hour at each of Griffin Company's desks before moving on to next one. Morning session is topic of group during lunch, above left. Below, Fred Griffin explains fueloil delivery through meter and hose. Following demonstrations, a round table discussion was held.*

Trying his hand *at truck dispatching, David Thompson has guidance of Mel Daggett, manager of oil department.*

Posting *to accounts receivable ledgers, Jamma Zingarella has direction of Maria Sullivan of Griffin Co.*

Fireboxes and Combustion

Part 2—How to avoid usual firebox design errors; Firebox Sizes for 1.0 to 15 gph

by

J. W. Schulz

HIGH FLAME TEMPERATURES, their specific advantages, and how to arrive at them, were covered in the first article in this series, in the August issue of FUELOIL & OIL HEAT. If up to now you have not done this, read that article before you go into this second article.

The first article included five points that give you incentives for designing fireboxes which produce extremely hot flames, and also included a seven-step program to use in designing fireboxes which produce extremely hot flames.

Several principles which affect firebox design and construction have appeared many times in the author's firebox articles in FUELOIL & OIL HEAT.

These principles include:

1. Design to have the oilburner nozzle as close as feasible to the firebox floor—so close that having it appreciably closer invites the trouble of oil impingement on the firebox floor and resultant formation of carbon on the floor.

2. Make the firebox so short that carbon would build up on its back wall, if it were appreciably shorter. Make it so narrow that carbon would build up on its side walls, if it were appreciably narrower.

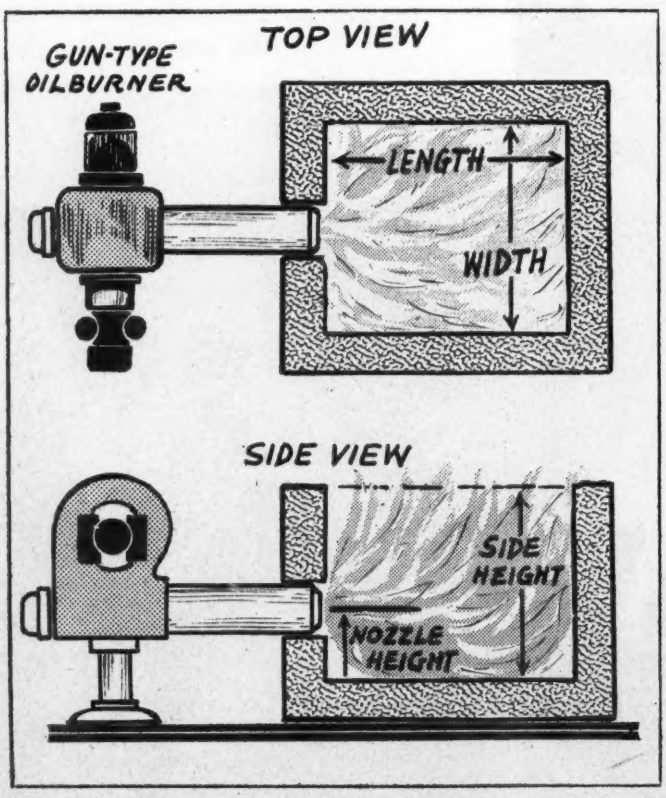
3. Make the firebox side-wall height at least twice the nozzle height.

4. On every job, plan to use the lowest gph firing rate that will heat the house properly on coldest mornings.

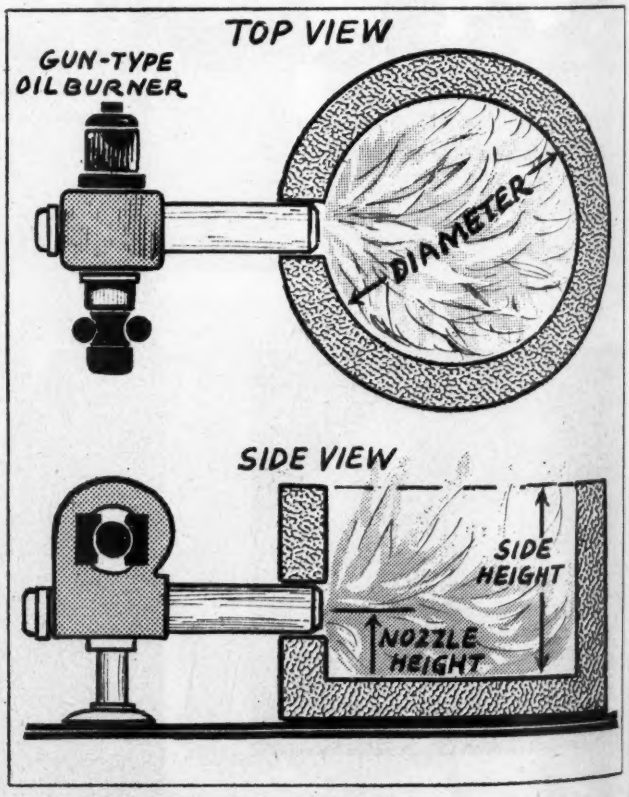
The first two points listed above lead to high flame temperatures by avoiding excessive firebox size for a given gph rate. The third point avoids a cool flame caused by insufficient side-wall height. The fourth point is in the direction of a proper gph firing rate for the job, instead of an excessive firing rate that causes the burner to run few, not many, hours on the coldest days of the heating season.

Modification of the fourth point may be required for smallest, well insulated homes having boilers which provide hot water from tankless water heating coils. For many such homes, the lowest gph rate that provides proper heating on coldest mornings is less than the gph rate that corresponds to an adequate flow of hot water from faucets. A house well heated by a firing rate of .85 gph may have a poor hot-water supply if its boiler, equipped with a tankless heater, is fired at the low rate of .85 gph.

There's sense in the reasoning of one oil boiler manufacturer who declares that 1.35 gph is the minimum gph for any boiler that provides hot water on tap through use of a tankless heater. He finds that a firing rate lower than 1.35 gph fails to provide adequate hot water for any home (having a boiler equipped with a tankless heater) and that instant-acting boiler temperature controls are needed, even at 1.35 gph firing rate, to provide



DIAG. 1 - BASIC RECTANGULAR FIREBOX
-SEE TABLE "FIREBOX DIMENSIONS"



DIAG. 2 - BASIC ROUND FIREBOX
SEE TABLE "FIREBOX DIMENSIONS"

enough hot water for smallest homes. He means that if the burner is idle, it should start practically instantly when a hot-water faucet is opened; if running, a circulator similarly should stop practically instantly.

The idea of using the lowest gph firing rate that heats the house properly on coldest mornings needs modification also on the rare jobs which have greatly oversize furnaces and boilers. You don't use a firing rate low enough to produce a ridiculously low stack temperature, below say 350° F. or 400° F. You don't fire an oversize steam heating boiler at such a low rate that it does not produce steam rapidly after its burner starts because heat is needed from the radiators. Under-fire the boiler of a one-pipe steam system, and you invite trouble related to radiator air venting, and to failure of some radiators to receive steam while others receive plenty of steam. Under those circumstances, of course, the system will not heat the house promptly and nicely on coldest mornings.

The accompanying table and drawings which give firebox dimensions are just a start in the right direction for a dealer newly determined to provide his installations with the best fireboxes that can be built. That's because the table plays safe; it provides fireboxes large enough for burners that do not provide modern, compact, well-shaped flames.

If you believe the burner you handle provides the excellent flame it should provide (the excellence of the flame depends greatly on the design of the air-handling parts in and at the end of the burner's gun tube), then go further after you build a firebox according to the dimensions in the accompanying table.

Find out if the firebox you built is needlessly large, and that therefore a smaller firebox would give a cleaner, hotter, more efficient flame.

One way for you to find out is to set up the burner to produce a flame larger than the firebox is designed for. Try a 1.35 gph nozzle, for example, in a firebox you designed for 1.0 gph. A firebox not undersize for 1.35 gph will not build up carbon if you fire it at this rate for a month or two.

Another way can be used by an intensive dealer to find out if the accompanying table leads to fireboxes too large for the burners he installs. After building a firebox, he can fire it by the nozzle he intended to use—with one or more of its dimensions reduced on a cut-and-try basis. For example, for a firing rate of 1.50 gph, a dealer built a firebox of 12" width and 15" length; nozzle height was 7". Using two-inch thick slabs of insulating firebrick cut to shape with a hacksaw, he shortened the firebox for-try to 12¼". To permit the firebrick pieces to be removed easily if that proved advisable, he cemented them temporarily against the back wall of the firebox using a fifty-fifty mixture of asbestos and refractory cement.

Shortened 2¼", the firebox reached red-heat more rapidly after the burner started, attained higher temperatures and produced higher flame temperatures, but showed no signs of atomized oil impingement on its back wall, and built up no back-wall carbon. Combustion testing instruments proved the fire better, the furnace's stack loss lower than it was at first with the firebox longer.

That brings up an important point about improvements in combustion and boiler or furnace overall efficiency —improvements the result of altering the firebox or altering any other variable that can make combustion better or worse, thus make fuel bills higher or lower. The important point is that a man is either foolish or ignorant if he tries to evaluate firing improvements without the help of combustion testing instruments.

Firebox Dimensions

Gph rate	*Nozzle height*	*Side height*	*Rectangular firebox width*	*Rectangular firebox length*	*Round firebox diameter*
1.0	6	14	10	12	12
1.25 or 1.35	6	14	11	13	13
1.5	6½	16	11	14	13
1.65 or 1.75	6½	16	12	14	14
2.00	6½	16	13	16	16
2.50	7	16	14	18	18
3.00	7	18	16	20	20
4.00	7½	18	18	21	23
5.00	7½	18	20	22	26
6.00	7½	18	20	26	28
7.00	7½	18	20	30	30
8.00	8	18	22	31	32
9.00	8	18	24	32	34
10	9	20	24	34	35
11	9	20	26	36	..
12	10	20	26	40	..
13	10	20	28	40	..
14	11	20	28	43	..
15	12	20	28	46	..

Notes: For firing rates above 7.00 gph, make the side walls 4" to 6" higher than the bottom of the waterleg of the boiler, to protect the mud leg of the boiler from excessive heat. Make the back wall of the firebox considerably higher than the side walls (at least 8" higher for 8.00 gph, and 12" higher for 15 gph). Build the upper part of the back wall with a pronounced corbel so that it extends over the fire, and step up the side walls at the back of the firebox to bring them to the level of the top of the back wall.

All dimensions are in inches.

The nozzle heights and side wall heights are measured not from basement floors but from the refractory floors of the fireboxes.

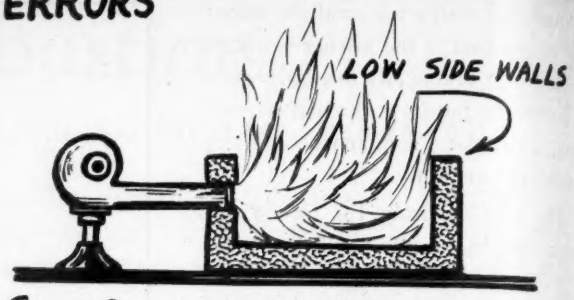
The lengths and widths of the rectangular fireboxes, and the diameters of round fireboxes are measured inside the fireboxes.

It is best to be extremely cautious, in the manner outlined in the article, when planning for the first time a large firebox for a certain make and model oil burner. Otherwise the flames given by certain burners may not fit the firebox shapes properly, and highly unsatisfactory operation may be the result.

Every oil burner dealer should make a high point of obtaining detailed instructions for building fireboxes from the manufacturer of the burner which the dealer handles. Only combustion experts who have years of experience in firebox design and refractory material problems, and who have full authorization and responsibility for doing development work, should deviate from the instructions.

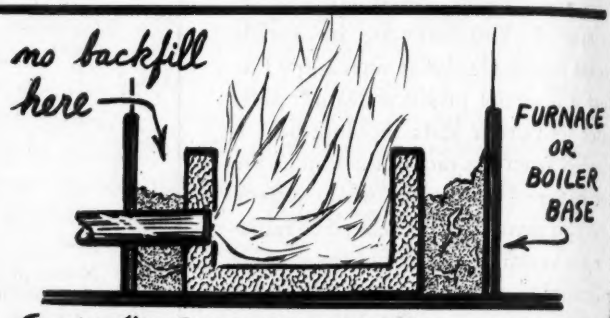
AVOID THESE ERRORS

Error 1: Firebox too large or too small for proper GPH firing rate. Important—use lowest GPH rate that heats house properly on coldest mornings.

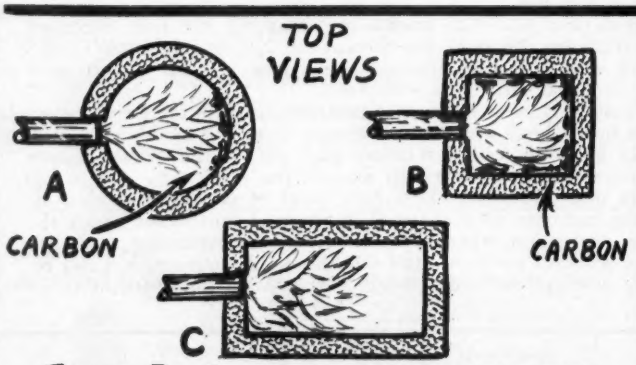


Error 2: Low side walls — side-wall height should exceed twice the nozzle height.

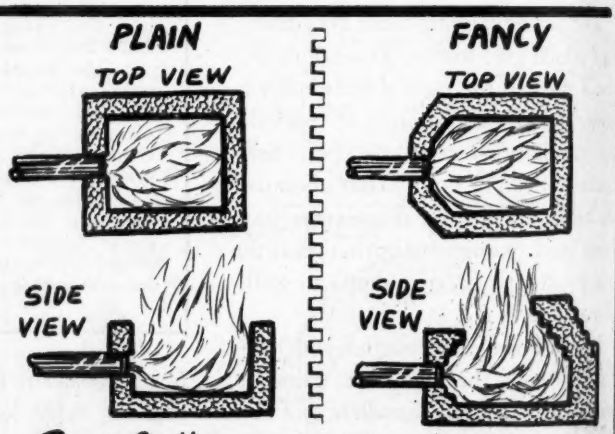
Error 3: Use of wrong refractory material. Results: firebox fails to become redhot, or deteriorates rapidly.



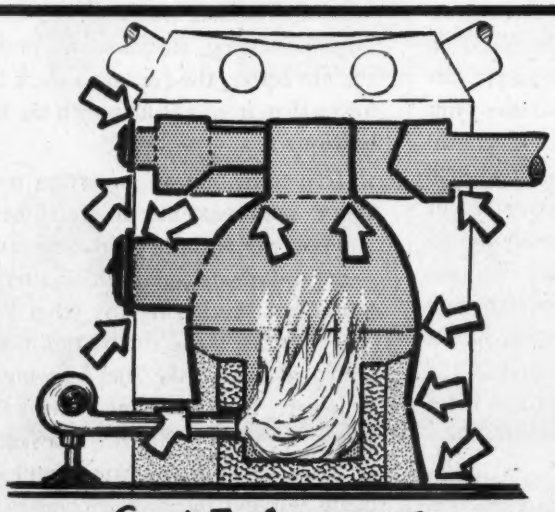
Error 4: Improper backfill — backfill sags, leads to air leaks and overheating of furnace or boiler base.



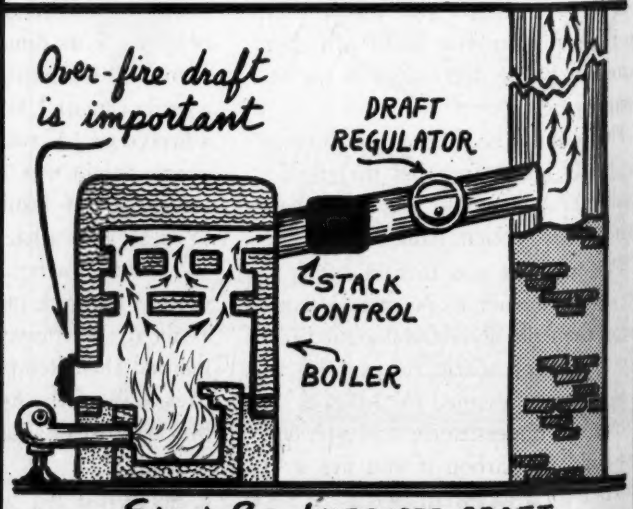
Error 5: Firebox of wrong shape for flame. Fired lightly, wrong shape firebox fails to become red-hot. Fired heavily, it builds carbon.



Error 6: Use of too-plain fireboxes.



Error 7: Air leaks



Error 8: Improper draft.

Combustion-testing instruments must be used to tell you if efficiencies are higher, and if fuel bills will be lower, as the result of efforts to improve a firebox.

Any successful effort to improve combustion shows up as a reduction in the stack loss of the furnace or boiler with the smoke reading the same, eliminating this variable. If your effort fails to show a reduction in the stack loss, you cannot prove your effort successful. If you produce a higher CO_2 reading or a lower stack temperature reading than could be produced before you started your effort (before-and-after smoke readings identical) the readings provide numerical and indisputable proof of your success.

As the accompanying full-page drawing shows as one of its points, a fancy firebox may be better than a plain firebox. A fancy firebox may have such features as corbel or step-in designs for its front wall, or rear wall, or both. Instead of having a floor of plain square or rectangular design, a fancy firebox may have a floor design patterned to fit the flame shape. The fancy floor shape may be oval or pear-shaped. Side walls may be winged at 30° or 45° angles to eliminate dead pockets in a firebox.

To judge such fancy features by studying firebox performance and flame appearance merely by eye is silly—futile and downright amateurish . . . because the value of any refinement in design or fancy feature can be established numerically in a matter of minutes.

As one example, a dealer wondered for years whether or not to lay out fancy fireboxes or plain fireboxes for his new installations. Not able to make up his mind, he wound up with some of his jobs equipped with the plainest fireboxes he could build, and with others equipped with the fanciest fireboxes he could dream up.

A factory engineer ended the dealer's problems by testing half a dozen of his jobs. For the testing, each burner was adjusted to produce a No. 3 smoke reading, Shell-Bacharach scale. The best, fanciest fireboxes the dealer could build gave CO_2 readings four to five percent higher than could be obtained from the plain fireboxes.

On-the-job combustion tests made in other cases proved that boilers and furnaces fired at certain gph rates produced decidedly lower stack-temperature readings after their fireboxes of poor or ordinary design had been replaced by carefully built, exceptionally good fireboxes. Fired at the same gph rate, a boiler or furnace gives a lower stack-temperature reading if its firebox is exceptional and therefore its flame is exceptionally hot. As was covered in detail in the first article in this series, hotter flames transmit much more heat to direct and indirect heating surfaces than do cooler, ordinary flames. A small increase in flame temperature results in a terrific increase in the amount of radiant heat given to the highly important direct heating surfaces. For those reasons, uncommonly hot oil flames are conducive to uncommonly low stack temperatures.

Avoid these errors *and your fireboxes will be exceptional!* **Error 1**, *wrong size firebox, usually takes the form of too large a firebox built to steer clear widely of the expensive troubles of insufficient firebox size. But you can easily correct Error 1 using insulating firebrick or other suitable material to reduce the firebox size.* **Error 2** *usually earmarks a cheap, shoddy installation; usually represents a direct effort to save money on firebox material.* **Error 3** *is in the same class, and so is* **Error 4.** *Conscientious installers use backfill material that won't sag and that's fairly air-tight; they often top it off with refractory material intended to become red-hot during long oilburner "on" periods.*

Avoiding **Error 5** *depends on knowing the shape flame the burner tends to provide, or can be adjusted to provide when unusual flame length or width is needed for an unusual furnace or boiler shape. The plain firebox of* **Error 6** *may give 2% to 4% lower CO_2 than the fancy firebox—with same smoke reading. Top view of fancy firebox shows wings of side walls, nozzle end of firebox. Side view shows corbels or step-in design for both front and rear walls.*

Error 7 *drawing emphasizes bad effects on firebox performance of air leaks around gun tube, furnace base, between sections of cast-iron furnace, and around fire-observation and flue-cleanout doors. Great air leaks can cause cool, dirty combustion that's often improperly blamed on firebox design. That holds true also for improper draft regulation,* **Error 8,** *caused by failure to install a draft regulator, use of a draft regulator of inferior design or construction, or setting a good draft regulator for excessive smokepipe draft. A combination of air leaks and excessive draft is especially detrimental to good firebox performance.*

❖

ACTION is sponsoring Show on community Improvement

A TRAVELING wide-screen show to further interest in the national campaign for better homes, better neighborhoods and better communities, and sponsored by *LIFE Magazine,* has been announced by ACTION—The American Council to Improve Our Neighborhoods.

The show, "Our Living Future," will be sponsored by representative groups in 75 cities of ten states starting October, 1956, and continuing through 1957.

Narrator of the show of motion pictures and stills will be David Hardy, narrator of "The World We Live In" show, who also will appear on TV and radio in communities visited.

"Our Living Future" will illustrate the impact on one family of such community problems as slums, traffic, recreation facilities, and mushrooming suburbs, and show what various cities and towns across the country are doing to solve these problems.

❖

Petroleum Trucks better safety Record for 4th Year

FOR THE FOURTH year running, petroleum tank trucks bettered their safety record of the year before in the 1954-1955 National Truck Fleet Safety Contest conducted under the auspices of the National Safety Council, according to advance figures.

Participating were 6,300 trucks of various sizes whose total combined travel approximated 204 million miles ahd whose accident record was 1.12 per one hundred thousand miles. The year before, the accident rate was 1.22.

Dealer in Comfort

Strong Cooling Emphasis Benefits Oilheating

WHY SHOULD a successful oilheating dealer add summer airconditioning to his line?

It's a perfectly logical extension of service to hear Herb Spade tell it. He's manager of the Oilheating Division, E. Robison, Inc., Hartsdale, N. Y., and as such he supervises the sale, installation and servicing of the oilheating equipment of more than 5,000 customers. In addition, Robison operates 13 fueloil trucks and maintains its own 1½ million gallon bulk plant and water terminal on the Hudson River to serve its Westchester County marketing area.

The Robison company was founded 35 years ago and has progressed and prospered through the years operating on the slogan: "The House that Service built." In addition to its oilheating division, the company has a hardware and appliance sales store and runs three service station-garage combinations; these function independently of the oilheating division.

The current season is the third year that the company has been merchandising cooling equipment through its oilheating division. Handling both the Carrier and Airtemp lines, nearly all of the central cooling installations made have gone into residences. During the three years there have been a few commercial jobs, including one 25-ton water tower system installed in a store, but the vast majority of the work has been in homes.

Spade explains that Robison first went into the cooling business back in 1938 and 1939, found it wasn't feasible at the time and withdrew. Then in 1954 it was felt that the time had come to sell cooling and, in typical fashion, the company jumped in with both feet.

The primary reason was a desire to impress customers with the fact that Robison could be identified as the "comfort dealer for year-round service."

"Essentially, Robison is a service organization," Spade continues, "and we saw a real opportunity to contact new customers, as well as to expand our services to present customers if we could offer central cooling systems. Particularly in this area—Westchester County—where we have been competing with natural gas for some time, we recognized the possibility of selling gas heating customers airconditioning and later converting their heating to oil in the case of the customers who were unable to obtain satisfactory heating service or who had complaints about high gas bills."

Another factor that influenced the firm to enter the airconditioning field was the deluge of service requests they received from people who had purchased cooling equipment and then were unable to get it adjusted properly or serviced by the installers.

A final deciding factor—and an important one—which convinced Robison of the advisability of becoming an airconditioning dealer involved its team of installation men, servicemen and salesmen, who after the busy season, entered a comparatively "dry period" beginning in March and extending through April and May and into June. Here was a time when in past years it had been difficult to keep the salesmen busy and where the company was hard pressed to keep the installation and servicemen occupied.

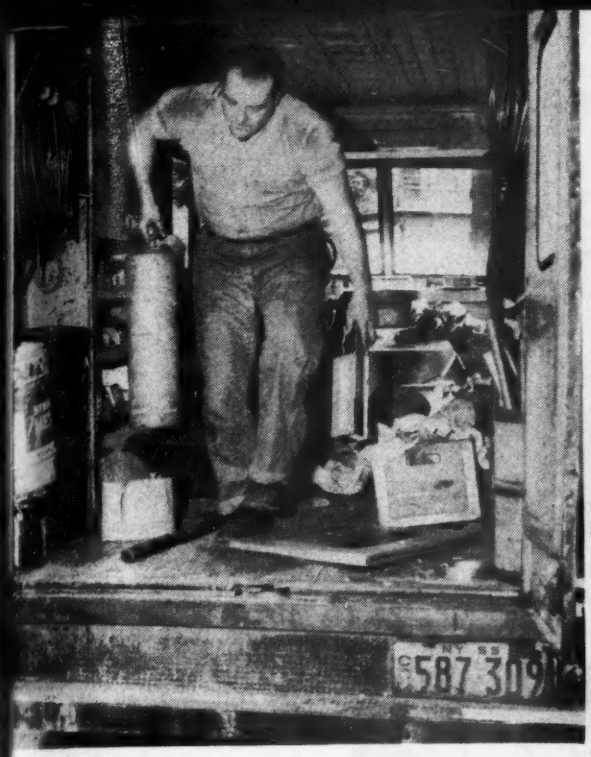
"Airconditioning sales just seemed a natural to fill this gap," explains Spade. "Airconditioning is sold, generally, not later than June 15. As a matter of fact, about 40% of our cooling jobs are sold or installed by June 1 and then there's a second rash of orders which keeps us busy pretty well through July. Frankly, the addition of cooling equipment has just about solved our problem of what to do with salesmen, installation and servicemen during the spring and summer months."

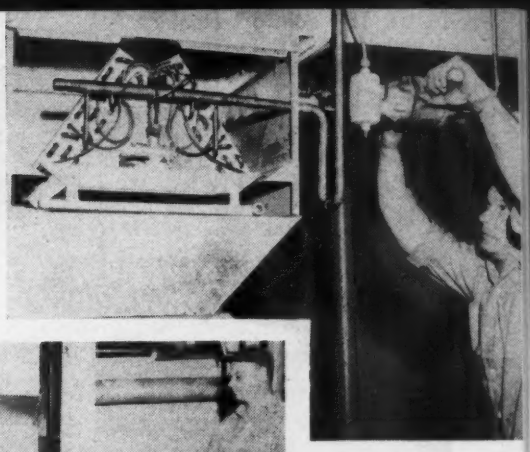
A warning, though, is in order for oilheating dealers who are considering going into airconditioning: Be sure that your personnel has the technical know-how to size properly, install properly and service properly.

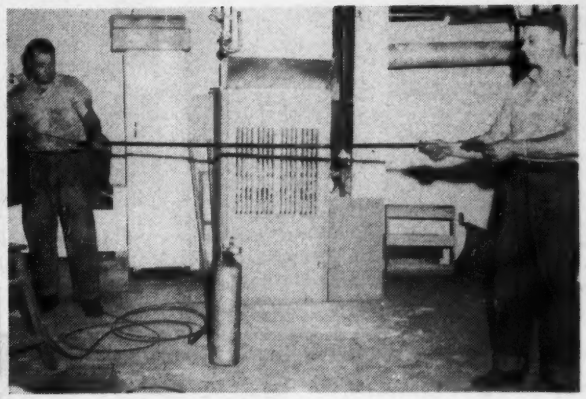
Eight months before Robison made its first cooling installation in May 1954, practically everybody in its oilheating division, including all installation and servicemen, salesmen and management personnel, attended a special course at the White Plains, N. Y. high school on airconditioning. Thus, for eight months beginning in October 1953 this group went to school two nights a week, even though the first job was not put in until the following May.

"Up to now," Spade concludes, "we've had no great difficulty with our airconditioning sales, installation or service. I attribute a great deal of this success to the background this schooling gave us.

"Airconditioning is no great mystery and the equipment available today is much improved over earlier models, with packaging and simplified installation paramount in the designer's mind. But, before you start making cooling installations, remember

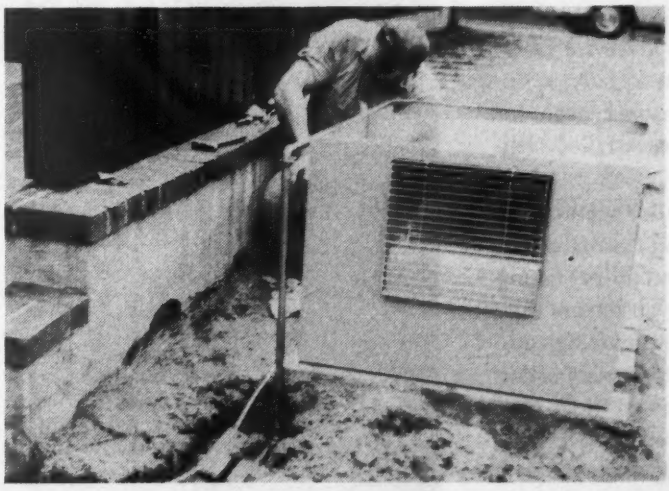


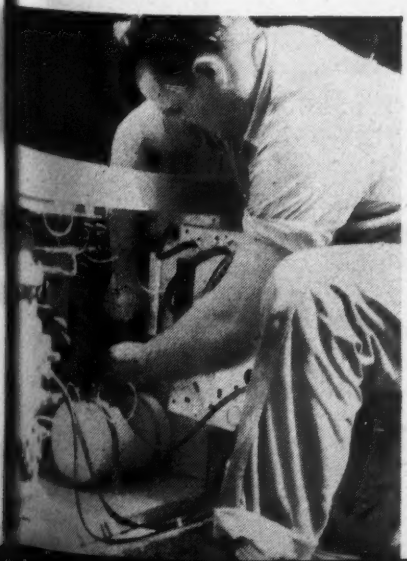


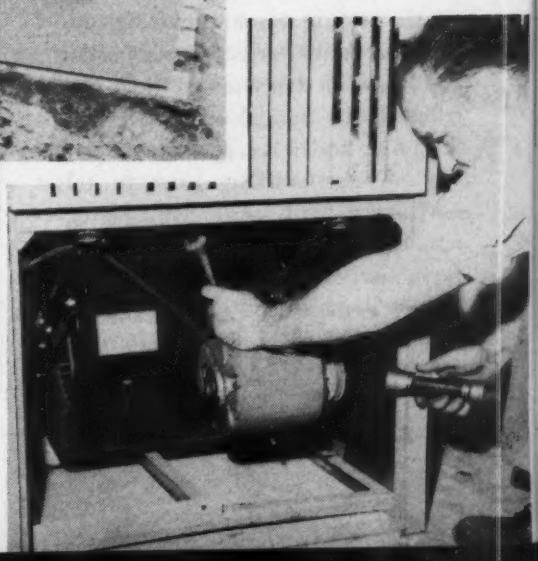


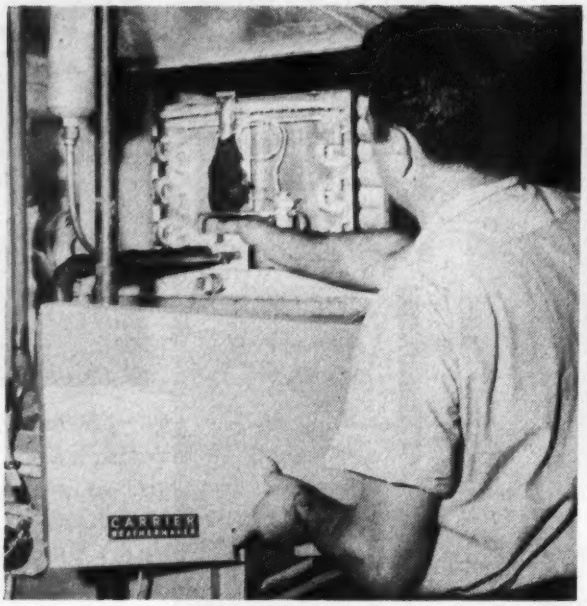
Abbreviated *picture sequence for recent Airtemp airconditioning installation of Robison Oil Co. begins with unloading of parts truck above. Next, installers clean refrigeration tubing by using an electrician's snake to pull through three cleaning rags: the first saturated with refrigeration oil; the second, with carbon tetacholoride and the third, clean and dry. At right, cleaned tubing, liquid line and cleaner are applied to cooling unit. Note v-coil, photo upper right, which makes unit particularly suited to job where space was restricted.*

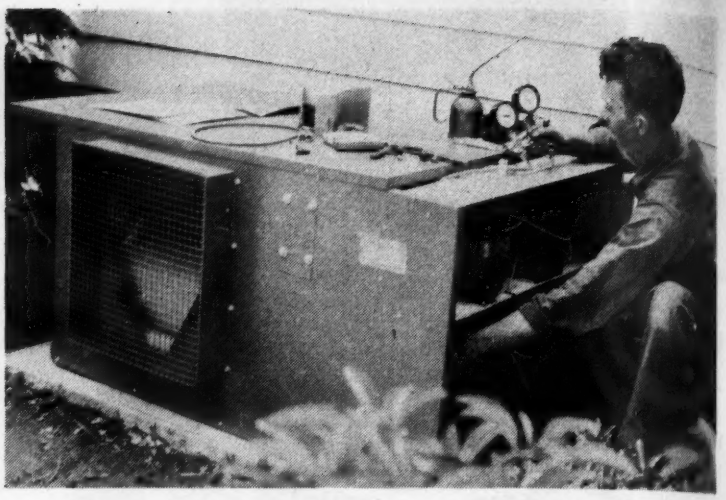
Three pictures below show connections being made to outside air-cooled condensing unit and final adjustments being made. Liquid line is connected to condenser, then run through trench back to basement. It is wrapped before being buried. Blower, in final photo, is being adjusted for more cfm before temperature readings are taken on both sides of coil to determine temperature drop.











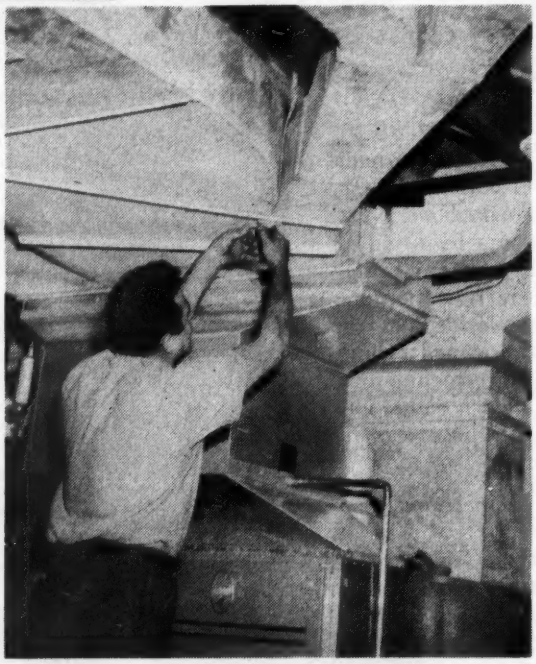
Carrier *cooling job installed during July by Robison Oil is pictured here showing just a few of the installation steps Left above, tubing is being wrapped with waterproof insulating material; then cover will be replaced. Above, adjustments are made with gauges to check head and back pressures. Other checks will determine coil face temperature and temperature drop over coil. Technician, left, adjusts damper in ductwork, one step in rebalancing system after fan is adjusted for proper cfm. Below, Herb Spade looks over complete job, examines coil mounted over plenum of Bryant furnace.*

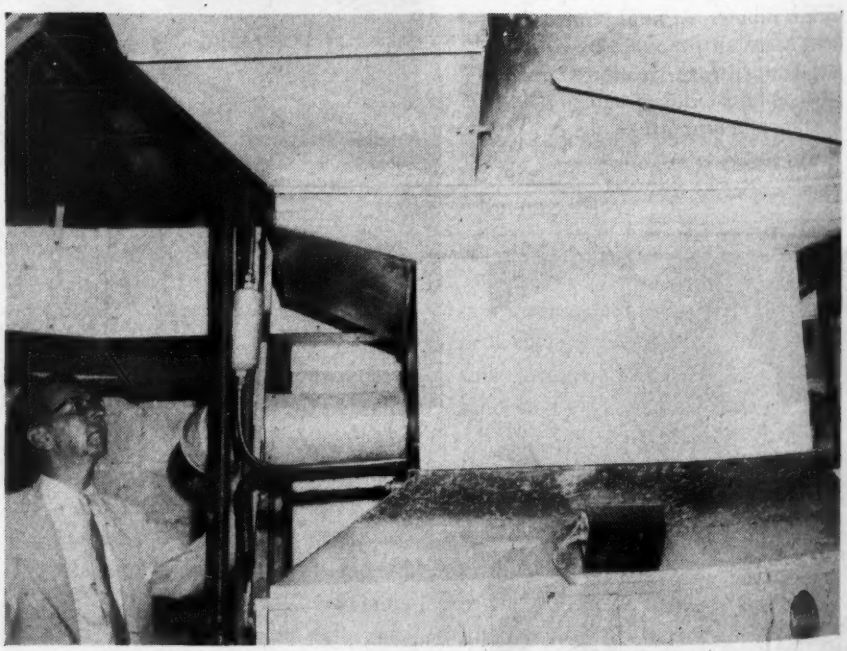
that there are some things about them which differ from heating calculations.

This is one company's concept of airconditioning for the oilheating dealer. Has it been successful? One gauge that indicates it has is the steady growth in sales since Robison went into airconditioning. The first year there were ten cooling installations; this increased to 24 in 1955. Now, up until August 1 this year, the company has completed 36 jobs and still had about 15 more scheduled, indicating a minimum of 50 systems in 1956.

"We're all for cooling, as a natural adjunct and complement to our oilheating business," Spade believes, adding the observation that, "at least in our area, there is a crying need for dependable and prompt service facilities for cooling system already in operation and, in some cases, even for those which have been installed comparatively recently.

"To us, though, the opportunity that airconditioning represents is best embodied in the concept of taking care of our oilheating customers during the heating season, providing comfort and similar service to our cooling customers in the summer, each contributing to our identification as a 'Comfort dealer for year-round service'. We're working hard on this notion, we think we're making progress and we certainly are looking for more business and increased appreciation by all of our customers of the part Robison Oil plays in keeping them comfortable 365 days of the year."





Fueloil skull Session

Customer Losses, Conversions, Replacements and Delivery discussed at Augusta

BEFORE THE RECENT annual meeting of the American Petroleum Institute at Atlanta, the Fueloil Committee of API gathered for a three-day meeting at the Bon Air Hotel, Augusta, Ga.

Thirty-five committee members and guests attended. During each of the three sessions industry people presented four informal papers, devoted to a particular phase of fueloil marketing. Following each paper an open discussion amplified the speaker's points.

Because advance information on the meeting indicated a fine concentration of progressive and capable marketing talent, notes were taken during the presentations with the thought of extracting the meat from each for the benefit of the industry. There follows the first four of the papers, with other abbreviated transcripts planned for future issues.

The papers are not reprinted in order of their presentation, but rather the first group was chosen because each of the four topics fits so well into the fueloil management concept of this issue. The first discusses customer losses; the next offers some suggested ways to speed up coal conversions to oil and with a companion piece on the replacement of old oilburners. The last paper presents the concensus of fueloil men as to what is needed for an ideal fueloil delivery set-up.

Why fueloil Customers switch and What to do to hold Them

by
Kirk B. Shivell*

CONFINING the discussion to an exploration of reasons why a retail fueloil dealer loses customers and what can be done about it, it becomes apparent that the extent of losses may vary. What is a high rate of loss for one company, may be normal for another and in any event, customer loss is a measure of the over-all health of a retail fueloil company, even though such losses may be offset subsequently by the acquisition of new customers.

Shivell

Rather than be concerned about why he is losing customers, the average retail fueloil distributor today should be more concerned with steps that can be taken to prevent customer losses in the first place. Also, positive action should be taken quickly to prevent its occurrence on those occasions when it is possible to find out that a customer loss may occur.

Families moving. This situation calls for fast action. Contact the customer and ask for a recommendation to the incoming family. A successful method is for the dealer to express regret that the customer is moving. Do this either by phone or by letter and then follow-up in a day or two with the request for the recommendation. If the family moving out is enthusiastic enough and has been well treated, the dealer can anticipate cooperation.

Mere good manners often are overlooked in handling this situation.

Switching to friends in the business. Emotional ties are involved here and in a great many cases this reason is merely an excuse. Many times investigation will uncover more serious underlying causes.

Credit Problem. Where this exists it is in more cases than not likely to be the fault of the company itself. Good credit practices all along the line are essential in this situation, with budget payments effective in eliminating credit difficulties.

Question of Price. This becomes serious only where customers are made conscious of price; far better to sell the quality of the fueloil and the service, since research proves few customers know the actual price they pay for fueloil; they become aware of it only when it is emphasized for them.

Trading Stamps. This promotion causes some customers to change fueloil dealers, but in most cases the dealers offering stamps are endeavoring to build gallonage without offering compensating services. In general, stamps are popular in super markets and department stores. It's interesting to note, though, that not a single great department store uses them; very few stores important in volume and prestige use them. Indirectly, trading amount to a cut in price.

Brand promotion is important in retaining customers. A customer who has been taught loyalty for a specific brand is not inclined to change dealers.

Brand loyalties get a severe test when a company changes hands, with a 10% loss about average. Best practice has been found to let the customers see as little change as possible; have the previous owners stay in the background at least for a time.

Service Complaints are a potential source of customer losses. Complaints usually are not for lack of promptness, but rather for failure of the serviceman to create the proper impression or for plain unsatisfactory service work. The value of the service department in holding customers becomes more important every day. The retail fueloil outlet is not really holding on to its customers unless it is supplying

*Shivell-Hall Co., New York, N. Y.

service. In this regard, service contracts that end during the heating season have proven valuable in retaining customers.

Delivery Complaints. Usually these complaints or losses therefrom are slight. Run-outs and spills are almost negligible occurrences now, largely due to automatic deliveries. Actually, lack of automatic degree-day delivery operations contribute to about one-half of customer losses. For example, it is not unusual for customers to call other fueloil dealers when they run out of oil; will-call customers are a vulnerable segment of any dealer's business. A woman telephone solicitor is suggested to convert "will-calls" to automatic delivery; also, a free tank treatment offer was used effectively by one dealer to accomplish this objective.

Dubious Loyalty. Customers who have been well-treated and whose good-will has been cultivated are loyal customers. The converse is true also, so that it becomes increasingly important to use such devices as "thank you" letters to new customers; have a man visit new customers and leave booklet about the company; use a cellar card; several months later follow-up with a letter to the customer inquiring if "everything is all right;" "give-aways" in general are discouraged, but used moderately they can be effective in building good-will; use envelope stuffers with each bill or mailing; promote budget plans and "clean-ups" to make oilheating more acceptable and trouble-free to the customer.

One company has used all these plans effectively in cutting customer losses.

The next, and perhaps more important, step is to establish sales and service organizations so that customers know their fueloil dealer can supply them with a complete package, covering all their oilheating needs.

What to do when a customer is lost:

Office manager immediately calls the representative responsible for the customer and has him phone or call the customer. If he is moving, the representative expresses regret at losing him and then attempts to secure the new owner as a customer.

If the loss is caused by a matter of credit, an attempt should be made to work out this problem. If a friend in business is involved, the general manager phones the customer and does his best to retain him, followed by a letter from the head of the business. If the customer expresses dis-satisfaction at some company service, the owner phones him or writes a letter. Follow-up in this instance constinues for a period of two years.

Summarizing, customers do not leave if they are handled properly as a matter of company policy.

Organize Sales and Service to convert coal Users to Oil

by

H. B. Davenport*

WE CAN AND MUST SPEED conversion from coal to oilburning principally because we are faced with such intense competition for this business from natural gas.

Davenport

I will confine my remarks to the areas in and around Salem where there remains a substantial number of hand-fired coal users. Until natural gas came into the market the rate at which coal users converted to oilheating was unimportant to fuel companies that sold both coal and fuel-oil. The dealer understood that there was a fair assurance that if and when the customer changed fuels he would use oil. Today the picture has changed to the point where the coal/oil dealer is in jeopardy of losing his coal customer entirely.

One of our local gas companies is featuring a large window display showing a "beaten-up" coal furnace in a cellar, a pile of dirty ashes and a battered ash container, with the theme: "How long are you going to put up with this? Change to clean automatic gas heat." Obviously, the gas companies feel that the objective of conversions from coal to gas are important in our area.

More recently utility promotion has been suffused with a note of desperation. They've been advertising lower gas rates for home heating after having reduced its price in the lowest step rate from $1.43 to $1.38 per 1,000 cu. ft. The advertising creates the impressions that the reduction has been substantial and that there have been several instead of a single 3½% drop. Current lowest step rate on gas figures out to a price of 13.8¢ per therm, against an oil cost of 10.6¢ per therm. Despite this the gas company's advertising continues to claim that gas costs less or no more than oilheating.

Another discouraging note has been sounded by newspaper editorials and magazine articles which indicate that the public is experiencing misgivings that they were hoaxed by extravagant claims made for natural gas in advance of its arrival here. And, news stories about failures of natural gas supply leaving homes without heat in mid-winter and serious accidents are making people wonder if natural gas is the perfect, faultless fuel which they were so glowingly promised.

Finally, the utilities apparently feel that it is only a matter of time before legislation similar to the Fulbright bill is passed. Then the increases in cost that must follow the removal of controls will make their position even less favorable. The result is that they are convinced they must increase their heating load now or face an even more difficult job in the future.

We in oilheating must use every possible means to convince present coal users that automatic oil heat is better for them than the fuel they are using now or the "new fuel" they are being offered. Here are some of the methods we have used successfully in Salem:

*Pocahontas Fuel Co., Salem, Mass.

Direct mail that continually solicits coal users, selling oil heat particularly during the winter and spring when they are experiencing the inconvenience of hand firing.

Newspaper advertising that features the fact that oil heat is better and is more economical. Supplement this campaign with tie-in ads with all co-operative oilheating promotional programs and run timed ads, for example, following warm spring days reminding coal users that with automatic oil heat they would not have needed heat yesterday, therefore would have used no fuel.

Radio and television spots to sell fueloil and the benefits of automatic oil heat.

Employee education and instructions to make employees aware of the threat of natural gas competition. Instruct people having contact with the consumer to check coal users for interest in oil heat and have fuel salesman do the same thing when answering complaints from coal users. Finally, compensate employees for leads that result in oilheating sales.

Some other ways to step up conversions from coal to fueloil include contributions in both time, as well as money, to co-operative oilheating promotional programs; sponsor and promote local oil heat shows with industry and educational displays and invitations to all coal users; tie-in a strong automatic oil heat promotion with Oil Progress Week. One of the most successful educational programs we have ever sponsored is our "Oil Man for a Day," during which we arrange with the local schools to let a group of students actually run the company for a day.

Finally, there are these requisites that should be observed: Sell oilheating equipment of proven engineering and mechanical excellence; sell low fuel cost rather than low first costs and include a survey to size equipment properly; make all installations painstakingly and test and adjust for greatest efficiency; maintain an adequate service department and charge for service at a rate commensurate with the service quality you supply; offer and honor an absolute guarantee of satisfaction or removal of oilburner and refund of money paid for it; train and supervise an adequate sales force, equipping it with a sound and convincing sales story and compensate salesmen well enough to induce them to serve your company with distinction.

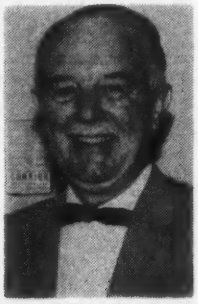
Remember, we've got to get in the first punch because the other guys are using brass knuckles.

Replacement of old Oilheating profits Dealer and Customer

by

J. W. Scott*

FIRST LET ME OUTLINE our philosphy in regard to oilburner selling. It's possible for a dealer to sell the cheapest burner he can buy, install it and get the customer's oil account. On the other hand, you can regard oilburner selling as specialty selling, with its required 38 to 40% mark-up, knowing that the specialty selling approach will provide the customer with the services he needs and which, while he doesn't always get them, he believes he's getting from the dealer who's selling the cheap—or at best—the ordinary equipment.



Scott

In specialty selling, of course, your salesman is important. He's interested in knowing how much money he can make—remember he gets at least half of that 38 to 40% mark-up. Give him realistic training. For example, our men get three week's schooling before they start to sell and one of these weeks is spent at the factory to learn about the equipment.

In this regard, we are convinced that it's necessary for a dealer to sell a line of equipment that's different from other burners. Handle one that has fundamental advantages which can be demonstrated. We use six trailers, each with a complete oilburner set-up for our equipment demonstrations. Also, you should have exclusive representation to make it worth-while for you to work for your percentage of the market. The customer who wants your equipment must come to you for it.

Where we find a home that needs a replacement oilburner, the salesman gets the size of the boiler, the square and cube of the house and the number of radiators or outlets. Actually, the heating system gets 85 fundamental checks, including a complete instrument check. The new man brings this information to the sales manager and the two of them go over it and prepare a proposal for the prospect.

The proposal is delivered to the prospect in an attractive brochure type folder. It tells him what he needs, while the salesman explains the parts of the proposal that tell the customer what we found out about his heating system from our analysis.

Always, we are shooting for the replacement of the entire heating system. The salesman has an alternate contract for replacing the burner only, but it is not part of the proposal and is used only when there is no possibility of selling the complete heating job.

The proposal, incidentally, is rather elaborate and contains pictures and other information about the company, photographs of the equipment to be installed, etc.

Actually, to get the information contained in our proposal the prospect would have to hire an engineer to make a similar study. In fact, he is being offered what amounts to a tailor-made job, since no two installations worked out on this basis are exactly the same.

When a prospect cannot buy the whole heating job, we take the order for the $325 to $350 burner replacement. Upon completion, then, this job is transferred to a follow-up file, with the notation that the boiler is in bad

*Buckley & Scott, Watertown, Mass.

shape. After the installation has been checked out, the customer receives a letter asking if we have given him all the things we promised and telling him that we are available 365 days a year to help him with his heating problems. We call his attention to the fact that he did not accept our proposal for a complete heating system replacement and thus we cannot guarantee the same satisfaction for the burner replacement job as we could for a complete job. We have thereby made a record of this notification and also have recorded the job for later follow-up by the salesman to sell the heating system replacement.

What we do with our follow-up on the replacement burner jobs is keep the customer informed that his equipment is not operating as efficiently as it could. Thus, he remains conscious of the fact that we have a proposal to modernize his equipment, but, equally important, we counteract to some extent any sales pitch that a competitor might make.

Our rate of replacement sales is almost 32% of our total sales and we have been concentrating on replacement of the system rather than the burner alone since we found that burner replacements too often gain for you all the troubles of the worn-out system, with the possibility that they can cause customer ill-will.

Our service department and sales department work very closely on these replacement sales, almost as if they were one department. Our servicemen are one of the best sources of leads for replacement jobs and we encourage them to turn in such leads by paying them 20% of the salesman's commission if the job is sold.

COMMENTS: *Davenport:* One of the reasons we all want to make replacement burner sales is to cut down on unnecessary or too frequent service calls. We have an approach to that whereby our service contract provides for an annual overhaul and two calls only. This has enabled us to get away from much of the abuses of unlimited service calls, which are annoyances anyway, which we shouldn't have if we do our job right. If a contract customer requires a third service call, the service manager goes out to see what is wrong. Then, if a "clinker" is found, the way is opened to explain that the equipment is old and beyond repair.

Scott: If we get a call from a customer not on contract, a salesman delivers the bill in person. If the customer signs a contract, he'll get credit for the labor charges on the bill and pay only for the parts, if any. We don't try to make a profit on service; instead we refigure the contract price each year on an actuarial basis. We now have 90% of our customers on contract at a price of $29.50 for all calls and all parts, $25.50 if the tank, combustion chamber and circulator motor are excluded.

Carson: On contract we average 1.7 service calls per customer and many of them are unnecessary. With non-contract customers our average is .9 service calls a year. However, if we offer service plans at all they should be all inclusive and I certainly would hesitate to restrict a contract customer.

Tight-fills and the Equipment for ideal fueloil Deliveries

by
T. E. Carson*

MY ASSIGNED topic was "Is the tight-fill system better for fueloil deliveries?," but since the almost unanimous opinion today is that the answer to this question is "Yes"—and I certainly agree based on our experience in Baltimore — the next question is, "Why?". To get the answer I have asked a group of practical fueloil men this question:

Carson

"If you were entering the No. 2 fueloil tank wagon business with a preponderance of home heating accounts using 275 gallon tanks and you had a sizable business of perhaps 4 million to 5 million gallons involved, plus sufficient financial means to do that which was necessary and advisable, how would you establish your delivery system from a physical viewpoint?"

After considerable discussion the group decided this about the fueloil delivery truck they would use. It would be the largest practical two-axle cab-over-engine truck, consistent with local regulations, to carry the largest practical load. Truck would have an electric hose reel, heated cab, power take-off in the rear of the truck to reduce the length of time pressure on the hose and 125 to 150 ft. of hose length, again consistent with local regulations.

The truck would be of the single compartment type, equipped with Quantrol valve, recording meter and ticket printing meter. Hose preferably would be 1¼", with 1½" nozzle, complete with fittings for tight fill connections.

The method of delivery decided upon called for tight fill connections, gallonage delivery rate of 60 gpm at engine speed of 750 rpm, with pumping pressure approximately 80 lbs. and shock pressure not more than 100 lbs. Our system would require VENTALARM fill signals on all tanks, with 1½" fills and 1¼" vents. Also, the utopian desire would call for all customers on automatic delivery, with a decidedly small quantity of C.O.D. customers. Finally, delivery tickets would be mailed from the office and not left by the driver.

The use of the tight connection our group agreed permits safe delivery at good pumping rate, since there is virtually no possibility of oil backing up out of the fill line. Then there's also the time saving with the combination of tight fills and VENTALARMS in eliminating: Lost time due to occupants being away at the time delivery is to be made; lost time in measuring tanks; lost time during unnecessary conversation with the homeowner.

Other savings are realized, for ex-

(*Please turn to page* 190)

*Sherwood Bros., Baltimore, Md.

The Risk in Type B Flues

Their relative Safety is less dependable than the all-purpose Type A

by
Robert K. Thulman

Editor's note—Few engineers in the country are as well qualified as the author to explore this subject. Identified with the heating industry in a governmental capacity for a good number of years he has a strong public interest attitude.

Until his recent retirement, Thulman was mechanical engineer in the Technical Division of FHA *in Washington, and in the few years just preceding retirement was its chief. During the war years he was a consultant to the* WPB *and a member of the Industry Advisory Council, Rationing Div.,* OPA.

This article by Thulman does not deal with the more standard objections held by oilheating men against the Type B *flue . . . rather he explores its inherent factors of risk, and suggests tighter standards for public safety.*

Robert K. Thulman

As the availability of natural gas spreads from one locality to another, building code officials are being subjected to pressure to amend or revise their codes to permit flues, limited to use with gas only—the Type B gas vent.

Type B gas vents have been widely used in certain areas of the country where gas is practically the only fuel and where its supply and cost are such that the likelihood of conversion to other fuels such as oil or coal, is remote.

This is the situation in the Southwest, particularly Southern California, where the climate, type of house construction and the methods of heating are quite different from those found in colder areas. Extremes of temperature, common in the north and requiring intensive firing, long spells of cold weather with correspondingly long periods of steady firing, are foreign to the area where the Type B gas vent originated. Tight construction; small, weather-stripped windows, close planning are likewise alien to these northern, colder areas.

Liquid and solid fuels and the wartime experience with rationing of these fuels is unknown in the Southwest. For these conditions a flue for use with gas only serves a purpose and, at least from a comparative fire hazard standpoint, may be considered to be adequate if it is proven to be safe, if its installation is proper and if its use is restricted to gas appliances which are easily identified as "approved."

Several Type B gas vents have been tested by Underwriters' Laboratories, Inc., and are listed in their "Gas and Oil Equipment List." This list specifies that: "These gas vents are suitable for venting gas appliances in accordance with the Standard of the National Board of Fire Underwriters for the installation of Gas Piping and Gas Appliances, Pamphlet 54. Type B gas vents are for venting only approved gas appliances except incinerators and conversion burners, which produce flue gas temperatures not in excess of 550°F and which are not required to be vented to Type A flues."

Until recently the tests, as a result of which the Underwriters' Laboratories listing of Type B vents was determined, included a temperature test during which flue gas temperatures of 550°F were carried in the vent. This temperature was chosen by Underwriters' Laboratories because it is "consistent with National Board of Fire Underwriters Pamphlet 54, which recognizes the use of Type B vents with approved appliances which produce flue gas temperatures not in excess of 550°F at the outlet of the draft hood when burning gas at the manufacturers' normal input rating . . ." (The quotation just given is from a Bulletin of Underwriters' Laboratories dated September 22, 1953). In other words, since the use of Type B gas vents is safe only if flue gas temperatures in them do not exceed 550°F, it was considered logical to select 550°F as the temperature for the tests to determine their safety and subsequent listing. The choice of this test temperature for the flue gases was logical, reasonable and valid only if the field operation of "approved gas appliances" were such that the temperature of the flue gases they produced could be depended upon not to exceed 550°F.

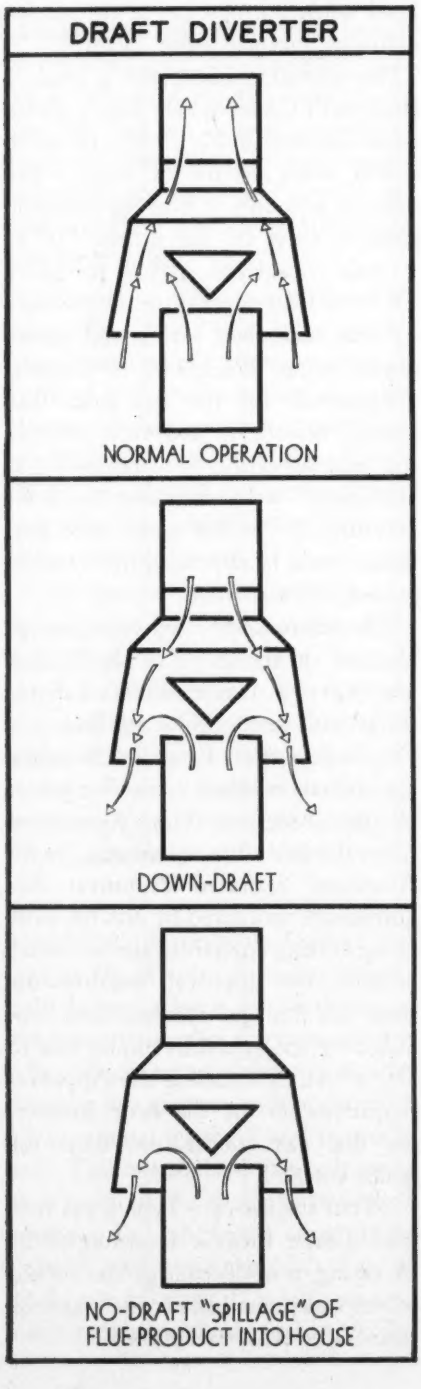
The reference to "approved gas appliances" in the listing of the Type B gas vent by Underwriters' Laboratories' and in the National Board of Fire Underwriters Pamphlet 54 means gas appliances which have been tested by the American Gas Association Laboratories' in accordance with American Standard Approval Requirements sponsored by AGA for most house heating appliances and for water heaters. ASA approval requirements limit the flue gas temperatures produced by the appliance under test to 550°F. An exception is the Approval Requirements for the floor furnace, the flue gas temperature limit for which is 600°F.

(Thus the use of a Type B gas vent with a floor furnace according to its UL listing, is not permitted and should be an exception just as the gas-fired incinerator is an exception.)

All of the "Approved gas Appliances" with which the use of a Type B gas vent is permitted, are required to be equipped with a draft hood. Known also as a "down-draft diverter," the draft hood serves to divert a flow of air down the flue so that it does not enter the appliance and blow out the pilot light with the probable result of interrupted service, if not an explosion.

The gas consumed by a pilot kept operating all year—in the summer, to avoid condensation in the appliance and in the fall to limit the service calls to the utility—is a substantial part of the total gas consumption. Pilot flames are purposely kept as small as possible to avoid high annual operating cost.

Gas vents *in Austin, Texas, Airconditioned Village.*



The draft hood also serves to stabilize the very low internal draft characteristic of gas appliances and to relieve the concussion wave, and its familiar "boom" which results immediately upon ignition of the burner. Installation instructions for gas appliances are very specific regarding draft hoods because any slight change of positioning or connection of the draft hood significantly changes the fine draft balance designed into the appliance and may so vary the flue gas travel that the safety of the unit is seriously threatened and its efficiency markedly reduced.

The operation of the draft hood on a gas appliance is expected to result in a dilution of the flue gases from the appliance with air from the space in which the appliance is installed. With an up-draft in the flue, with a free and unrestricted supply of room air entering the draft hood relief opening, the dilution usually takes place as expected. The greater the up-draft in the flue, the more dilution but, when periods of down-draft due to wind effects or other causes occur, there is no dilution and the flue gases "spill" from the relief opening into the living space. During periods of starting in cold weather, it takes a long time for the cold flue to "prime" and, again, the flue gases "spill."

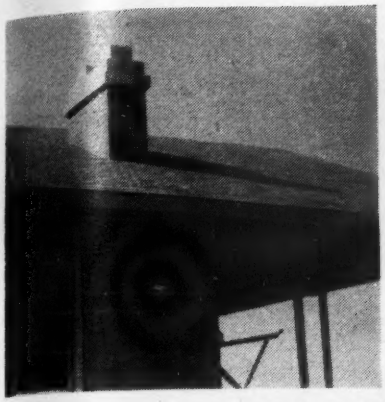
During neutral periods—no dilution—the temperature of the flue gases entering the vent is very close to the temperature at which they left the appliance. If they leave the appliance at the 550°F permitted in the Approval Requirements, they will enter the Type B gas vent at substantially this 550°F temperature. It is for this reason that the test temperature of 550°F was selected it reflects a certain degree of logical fire protection engineering practice.

The procedure under which gas vents were tested by Underwriters' Laboratories to determine their eligibility for listing for many years had been based on installation practices common to the area in which the Type B vent originated—the Southwest. The procedure was not considered to be representative of the performance that might be expected in colder climates. For this reason and because of the wider use of gas vents in colder climates, Underwriters' Laboratories undertook, about five years ago, to amend and revise the test procedure so that Type B gas vents listed in their "Gas and Oil Equipment List" could be used anywhere with reasonable expectation of safety from fire.

As is the case in all programs of this kind, the advice and counsel of the manufacturers of Type B vents were solicited. At an early stage in the discussions it became evident that the manufacturers of Type B gas vents were anxious that the test temperature of the flue gases in the vent be reduced rather drastically. They argued that draft hood dilution is a dependable factor in lowering the flue gas temperatures in actual operation and that the periods of no-dilution were too brief and infrequent as to constitute a serious threat to fire safety.

Also, as part of the process of revising the Standard, Underwriters' Laboratories conducted extensive tests of their own on the several Type B gas vents currently listed by them. The results were reported in a UL Bulletin of September 22, 1953, which, to those interested in fire protection, must have been one of the most startling reports they had ever seen; It deserves unedited quotation:

"It has also been determined that



Type A flues — *all-fuel prefabricated chimneys for which standards of performance have been drawn by the Underwriters' Laboratories to protect property despite owners' use — or abuse — of equipment.*

none of the currently listed gas vents which have had a good safety record when used with approved appliances could be expected to comply with the test requirements as proposed in the previous draft (of the Proposed Standard). Therefore, it seemed logical to modify the test method for the general purpose Type B vent to provide a dilution factor but still simulate maximum temperature conditions expected in service."

This was based, apparently, on the assumption that, if the use of Type B vents were confined to "approved appliances," if the flue gas temperature of the "approved appliances" did not exceed 550°F and if draft hood dilution were consistently dependable as a factor to reduce vent temperature, a reduction of the test temperature was justified. But, this reasoning is far from the usual approach of the fire protection engineer; it is not the philosophy common in the preparation of a standard for safety, it is not found in building codes, nor is it to be found anywhere in any of the other Standards for Safety of Underwriters' Laboratories. (It is notably absent in the Underwriters' Laboratories "Standard for Factory-Built Chimneys," the Type A or all-fuel prefabricated chimney, which will be discussed later.)

The records of fire losses are not categorically classified with sufficient refinement as to causes to show fully the extent of losses due to overheated Type B gas vents when the flue gas temperature of an approved appliance, due to maladjustment, orifice changes, or other causes, exceeds 550°F. Nor do they show the losses due to draft hoods which did not dilute, nor due to use with approved gas appliances which do produce flue gas temperatures in excess of 550°F, such as the approved gas floor furnace and the approved gas incinerator.

The use of Type B gas vents is not unknown for venting the gas incinerator which produces flue gas temperatures of 1400°F and higher. In fact, since the only warning to the owner of a home with a Type B gas vent is a label, (required to be attached to it—but seldom is)—which says: "This flue is for gas-burning appliances only," gas incinerators have been and are being connected to Type B vents and fires have occurred as a result.

To the homeowner, the incinerator is nothing more nor less than a gas appliance. To him, the Type B gas vent is a "gas appliance vent." Also, it's the only flue in the house. Incidentally, the NBFU Pamphlet 90 requires that this label be applied only "in those sections of the country where solid and liquid fuels are used extensively." The label would not, for example, be required in the Southwest, yet it is in this area that the widest misuse of incinerators with Type B vents is reported.

All of the Type B gas vents listed by Underwriters' Laboratories are required to be installed with at least a one-inch clearance between the walls of the vent and combustible material enclosing it. The requirement for clearance, especially in the case of a flue, is difficult to enforce. By the time the inspector gets on the job, the flue is enclosed. It is, in fact, required to be inclosed where it passes through living space. He has little assurance that the required clearance was maintained.

It is for this reason, that standards for the installation of equipment, the installation of which requires any clearance, generally include factors of safety so that the seriousness of hazards due to faulty installation are reduced. Such factors of safety are ample in the UL-"Standard for Factory-Built Chimneys," but are absent in the UL "Proposed Standard for Gas Appliance Flues."

It may well be that the use of Type B gas vents with incinerators or other unapproved appliances or, that failure fully to observe the required installation specifications for clearance, may account to some degree for the high fire losses attributed to overheated gas-fired heating equipment. They may account for a substantial part of the terrifically high fire losses caused by overheated chimneys and vents. It also may well be that, in actual installations in houses, "approved gas appliances" actually do produce flue gas temperatures in excess of 550°F and that the dilution effect of the draft hood to reduce vent temperatures is not sufficient to reduce them to a safe point.

These latter two hypotheses—flue gas temperatures in excess of 550°F and failure of the draft hood to dilute effectively—are supported by data in a recently published report of the American Gas Association Laboratories. This is Research Report No. 1243, "A Field Survey of Gas Appliance Venting Conditions." It is sponsored by the American Gas Association Committee on Domestic Gas Research through the Committee for Heating and Air Conditioning Research. The survey was geographically comprehensive. It embraces investigations of a wide variety of appliances. The data which it reports are typical and representative. In the light of such sponsorship, technical competence, scope and purpose, there can be no question of its reliability.

The survey reports flue gas temperatures at the outlet of appliances ranging upward to 900°F! Temperatures at the draft hood outlet were found to be as high as 490°F! Twelve

per cent of the central heating appliances exceeded the 550°F limit specified in the ASA Approval Requirement for them! Only 2% of the water heaters exceed the 550°F, but one produced a flue gas temperature of 800°F! Two floor furnaces exceeded their 600 limit with flue gas temperatures of 700°F and one hit 900°F!

In all classes of appliances, instances were reported where no dilution air entered the draft hood. In 20% of the cases, the quantity of dilution air was so low that, had flue gases entered the draft hood at only the 550°F limit and had the temperature of the air entering the draft hood been only 70°F, the temperature of the flue gas-air mixture entering the vent would have been 420°F.

This is most significant because in the current draft of the "Proposed Standard for Gas Appliance Flues," 420°F is the temperature selected to determine the eligibility of a Type B gas vent for listing in the Underwriters' Laboratories "Gas and Oil Equipment List." This is the temperature chosen as "realistic" to determine the vital fire safety of a vent. This is called in the "Proposed Standard" the "normal" temperature.

Even the most indulgent conclusion which might be drawn from the data in the survey would dictate the selection of a test temperature far higher than 420°F. Even the selection of 550°F would have been an optimistic choice. Instead of a factor of safety, the "Proposed Standard for Gas Appliance Flues" seems to have incorporated a "margin of hazard."

In the preparation of standards for safety, indulgence and optimism are practically unknown. The dedicated fire protection inquirer considers extremes as normal. In establishing the requirement for fire safety, he usually selects for his criteria, the worst combinations of extremes. As an example, consider the requirements in the Underwriters' Laboratories "Standard for Factory-Built Chimneys." This standard requires that the test specimen of the all-purpose, all-fuel chimney undergo a temperature test of extreme severity. Flue gases are introduced into the chimney at a temperature of 1000°F until a stable condition is reached. This test lasts about five to eight hours. Underwriters' Laboratories describes the test as follows:

"This represents sustained firing at a temperature infrequently reached for long periods in coal and wood fired heating appliances and hardly ever in automatically fired appliances."

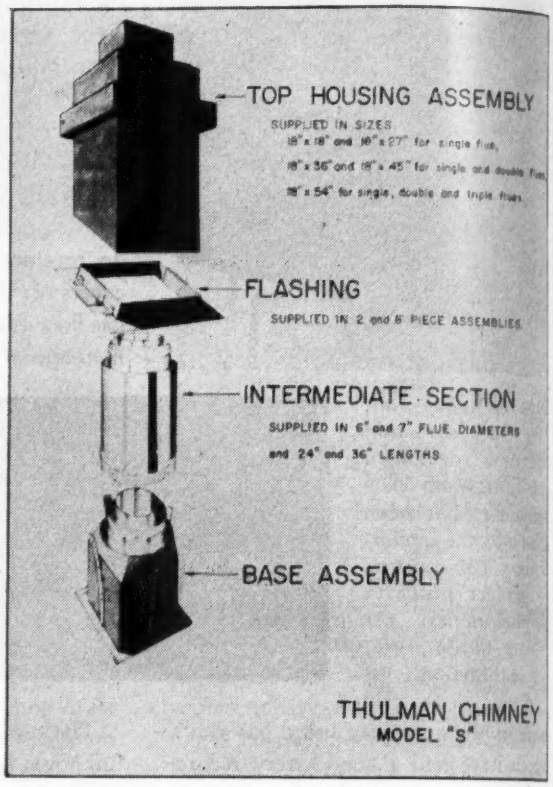
When equilibrium is established and the chimney is well-warmed up, the flue gas temperature is raised to 1400°F and maintained at that point for one hour. This second step in the temperature test is described by Underwriters' Laboratories as follows:

"This represents the infrequent short-duration temperatures which might develop in hand firing with volatile coals, kindling, etc. This temperature entails secondary combustion in the flue with emission of flame at the outlet."

The standard is not satisfied at this point; it specifies that the flue gas temperature now be raised to 1700°F and maintained there for 10 minutes. Of this test, Underwriters' Laboratories says:

"This condition could result only through a severe chimney fire or extreme secondary combustion in a flue. Tests on over-fired, single-pass stoves have indicated that this intensity can be reached for short periods but cannot be sustained under conceivable heating appliance abuse."

These tests represent the philosophy of selecting extremes as criteria, a true example of competent fire protection inquiring at its best—(or worst, depending on the point of view). A factory-built chimney listed by Underwriters' Laboratories as a result of successfully meeting the requirements of these tests can be approved by the building official with full confidence that its use—and to a great extent its mis-use—will in no degree whatever adversely affect the fire safety of the house in which it is installed. No "conceivable heating appliance abuse" can result in a fire in the structure.



All-purpose *chimney designed by author.*

Why was this philosophy ignored so flagrantly in the preparation of the "Proposed Standard for Gas Appliance Flues"? Two reasons have already been given. The first, that vent temperatures were substantially lower than appliance outlet temperatures because of draft hood dilution. This reason was effectively invalidated by the AGA Laboratories field survey which showed that draft hood dilution was not dependable. The second, that "none of the currently listed gas vents which have had a good safety record when used with approved appliances could be expected to comply with the requirements as (originally) proposed," seems, therefore to be the true reason.

It raises the interesting question of the wisdom of tailoring a standard to meet a product. While this is not an unknown technique, it does raise the equally absorbing question of its validity where fire safety is at stake. In this case, it suggests that someone has been badly misled. There can be no

(*Please turn to page 192*)

Fueloil profit Percentage is three Times that of Gasoline

AGAIN AVERAGE PROFITS on fueloil are shown to be considerably higher than those on gasoline or other petroleum products in a study made by the Uniform Accounting Committee of the National Oil Jobbers Council.

The fiscal year 1955 was the third consecutive year that fueloil proved to be the most profitable product for jobbers. In terms of percentages the profit from operations on fueloil was more than three times greater that of gasoline. Moneywise, the profit on fueloil is nearly two times greater than gasoline.

A total of 96 companies co-operated in the study, they were located as follows: 48 companies in the Midwest; 42 companies in the South; and six in the East. Almost all of the companies sold both gasoline and fueloil.

The margin on fueloil was 2.88¢ up from the last NOJC report when the margin was 2.54¢. Profit on fueloil was .42¢, also an improvement over 1954 when the profit was .39¢. Gasoline's margin was 3.48¢ up from the previously reported figure of 2.85 and the profit was .24¢ for 1955 and .22¢ for 1954.

Administrative and sales expenses on gasoline ran substantially ahead of fueloil.

Using percentages to clarify the picture if 100% represents sales less discount then the cost of marketing gasoline comes to 85.45% compared to 78.23% for fueloil. Gasoline's margin is then 14.55% of the total and fueloil's margin is 21.77% of the total.

In terms of total dollars involved, the operating profit on fueloil is 3.17% or more than three times greater than the operating profit on gasoline, 1.00%. Other petroleum products rated a profit of 2.70%.

The other tables show a breakdown of the four principal categories of expense: delivery, bulk plant, sales and administrative. The detail of these expense listings applies to the entire operation of the company — not just fueloil and gasoline expenses. Part of the jobbers business might be in kerosene, diesel fuel and TBA items.

NOJC Uniform Accounting Statement by Products—1955

	—GASOLINE—		— FUELOIL —		Other Products	
	Price per Gallon	Percent	Price per Gallon	Percent	Percent	Total
Sales less discount	23.91¢	100.00%	13.23¢	100.00%	100.00%	100.00%
Cost of Sales	20.43	85.45	10.35	78.23	81.59	82.04
MARGIN	3.48	14.55	2.88	21.77	18.41	17.96
Delivery Expense	.96	4.02	.82	6.20	4.78	5.01
Bulk Plant Expense	.38	1.59	.34	2.57	2.28	2.06
Sales Expense	.84	3.51	.53	4.01	4.13	3.78
Administrative Expense	1.06	4.43	.77	5.82	4.52	5.03
TOTAL EXPENSE	3.24	13.55	2.46	18.60	15.71	15.88
PROFIT FROM OPERATIONS	.24¢	1.00%	.42¢	3.17%	2.70%	2.08
Discounts earned and other Income						.59
Net profit before taxes						2.67
Income taxes						1.00
Net profit after taxes						1.67%

Condensed Operating Statement by Sections

	Midwest	South	East	All Sections
Sales	100.00%	100.00%	100.00%	100.00%
Cost of Sales	81.61	84.63	81.66	83.30
MARGIN	18.39	15.37	18.34	16.70
Expense	15.32	13.31	15.03	14.18
Profit from Operation	3.07	2.06	3.31	2.52
Other Income	1.19	.65	.51	.85
NET PROFIT BEFORE TAXES	4.26	2.71	3.82	3.37
Income Taxes	1.51	1.04	1.23	1.23
NET PROFIT AFTER TAXES	2.75%	1.67%	2.59%	2.14%

NOJC Uniform Accounting Statement—1955

	Percent of Sales
DELIVERY EXPENSE:	
Wages, Commissions, etc.	2.78
Payroll Tax	.08
Truck Maint. & Repairs	.44
Truck Operation	.54
Truck Depreciation	.56
Truck Licenses	.23
Insurance	.12
Rent & Storage	.13
Supplies	.06
Miscellaneous	.07
Total Delivery Expense	5.01
BULK PLANT EXPENSE:	
Wages & Salary	.86
Payroll Tax	.02
Plant Maint. & Repairs	.30
Plant Depreciation	.32
Insurance	.13
Rent	.10
Stock Loss	.04
Power, Light & Heat	.10
Property Taxes	.12
Miscellaneous	.07
Total Bulk Plant Expense	2.06
SALES EXPENSE:	
Wages & Salary	1.48
Payroll Tax	.02
Station Equipt. Maint. & Repairs	.33
Station Equipt. & Depreciation	.39
Insurance	.07
Car, Travel & Entertainment	.34
Advertising	.66
Property Taxes	.11
Miscellaneous	.38
Total Sales Expense	3.78
ADMINISTRATIVE EXPENSE:	
Wages & Salary—Office	1.21
Salary—Officers & Owners	1.92
Payroll Tax	.07
Car Operation	.13
Office—Maint. & Repairs	.06
Depreciation, Office Equipt. etc.	.13
Insurance	.23
Rent, Office Supplies & Postage	.25
Water, Light & Heat	.06
Travel Entertainment	.15
Telegraph & Telephone	.17
Interest	.17
Bank Charges	.01
Legal & Audit	.16
Dues & Subscriptions	.08
Directors Fees	.02
Miscellaneous	.21
Total Administrative Expense	5.03

Mid-Hudson grows on Concept of Better operating Methods

FOR TWENTY-ONE YEARS Mid-Hudson Oil Co. has been operating in the Dutchess County area, in and around Poughkeepsie, N. Y. Richard F. Meyer, the company's president, treasurer and sales manager, summarizes Mid-Hudson's philosophy when he points out that the company was founded in 1935 with the idea of offering unit responsibility to its customers.

This was not a popular notion at the time, Meyer continues, but "Our successful growth over the years has justified our conviction that we can keep customers satisfied if they feel sure they will be able to call upon us for all oilheating services." In other words, 21 years ago Mid-Hudson started out selling fueloil and burners, with the assurance that the homeowner who bought from them would receive any service the equipment required, plus the knowledge that the company was contributing further to his heating comfort by supplying the fueloil he needed.

After its first year in business, Mid-Hudson switched to Esso and has been distributing its heating oil ever since. The firm acts also as distributor for the Esso burner line and at present has six installing dealers under its supervision.

Mid-Hudson's bulk storage plant at the foot of Prospect St. in Poughkeepsie is on the site of the original office. Its 9 million gallon storage capacity is augmented by the nearby and recently acquired Poughkeepsie Oil Terminal which provides an additional 1 million gallons of storage. A third bulk plant is the Northern Dutchess Oil Terminal at Barrytown, N. Y., serving the northern areas of the County and adding another 1½ million gallons storage—a grand total of 11½ million gallons of storage capacity available for Mid-Hudson's use. This contrasts with the two 20,000 horizontal storage tanks which were sufficient in 1935.

The two terminals referred to operate as separate corporate entities with their facilities available to Mid-Hudson.

Some interesting aspects of the company's Electrofile automatic degree-day delivery system and its oilburner service set-up are illustrated in the accompanying photographs and explanatory text.

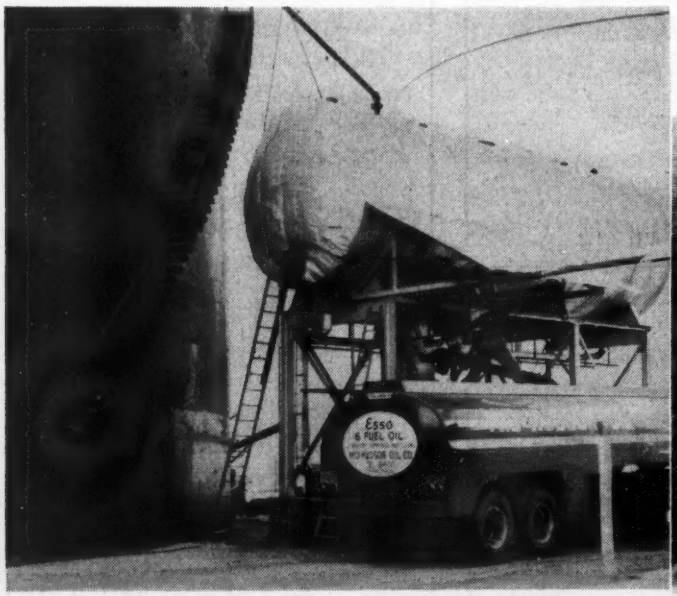
At the present time Mid-Hudson provides fueloil and burner service to approximately 4,500 customers, with just about 95% of them within 15 miles of the plant. The service department is housed separately, a short distance from the Prospect St. bulk plant and main office. There is still a third office in Poughkeepsie—the sales office on Raymond Ave. Out of here the salesmen operate and customers may pay their bills, if they so desire. There is also an equipment display at this address. Mid-Hudson, incidentally, averages better than 250 burner jobs each year.

Its 4,500 customers are augmented by some 60 heavy oil accounts. Also, Meyer pointed out that activity in replacement burner sales is quickening, with responsibility for such jobs now centered in the burner service department.

Mid-Hudson's basic policy is that the customer wants comfort and "We bend every effort to see that he gets it and gets it efficiently. In essence," Meyer declared, "we continually try to do for the customer what we'd like to have done to us if we were buying." Mid-Hudson's slogan, "A personal interest in serving you well," personifies this concept.

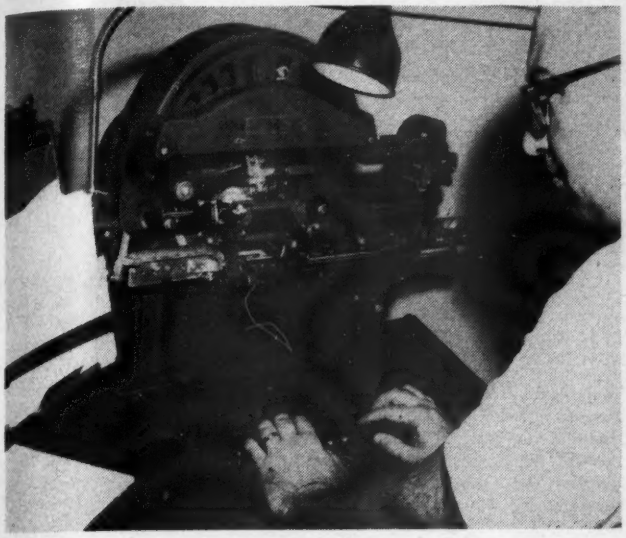
A total of 3,500 customers rely on

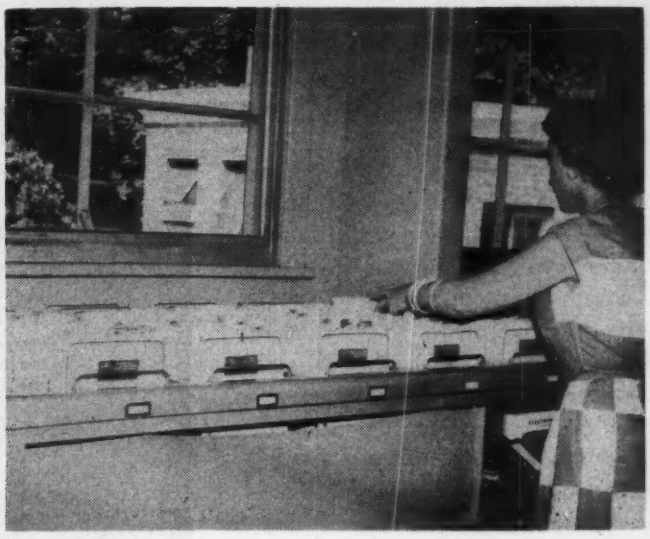
(Continued on page 100)



Left: *A 5,300 gal. trailer with tandem axle filling up with No. 6 oil at Mid-Hudson's Poughkeepsie bulk plant. The truck is supplied from the 3½ million gal. storage tank visible at the left, where oil is heated and transferred to the insulated 20,000 gal. day tank, directly above the truck.*

Right: *A bank of vertically-mounted Ingersoll-Rand pumps used for truck loading. The nearby Hudson River has flooded the yard here two or three times. The vertical mounts, however, will keep the pumps operating at least until the water is 32" deep.*





ELECTROFILE automatic degree-day system as used by Mid-Hudson Oil Co., Poughkeepsie, N. Y. The system makes use of a master card, across the bottom of which is laminated a series of metallic teeth. These can be coded easily to designate delivery zones, customer's name and almost any other variation desired. Actually the system codes, verifies, houses and selects from a single set of cards.

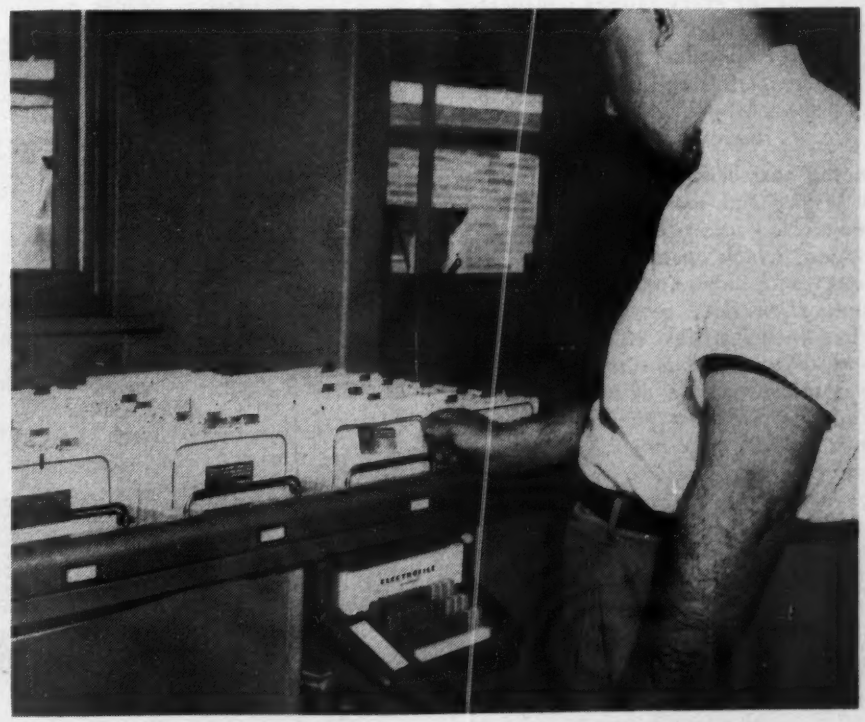
William Kolbinski, Mid-Hudson's fueloil dispatcher, is shown in the upper left hand picture beginning the sequence which results in a properly filled-out master card prepared for the Electrofile. He's making up an Addressograph plate from information turned in by the salesman, which indicates the customer's name and address, delivery zone number, type of tank and any other special information that a fueloil driver should know. All of these are included on the plate, an impression of the plate made on the master card and finally, the plate is secured to the master card with a wide strip of Scotch tape.

The other views show Rita Carey, (upper right) re-filing master cards, while Kolbinski examines a completed card in the photo at the lower right.

Briefly, Electrofile works in this way. The master cards are filed in the trays, arranged in groups according to their next degree-day delivery totals, graduated by hundreds. When ready for a delivery, the cards are removed, delivery tickets are addressed from the stencil on the card and the prepared tickets sorted for the drivers. The master cards then go to a posting file and when the delivery tickets are turned in, the gallons delivered and degree-day data are transferred from one to the other. Cards eventually are re-filed in the Electrofile trays, again grouped according to their next degree-day delivery number.

Some of the advantages that Mid-Hudson has found using the Electrofile system include faster preparation of the delivery tickets for fueloil drivers, ability to pick out customers automatically by delivery zones, besides the advantage of being able to pick out an individual customer's card, even though it may not be filed in its proper alphabetical place. This is made possible by coding each card —by means of the metallic teeth— according to the first initial of the first name and first three letters of the last name. In addition, all customers in any one of the nine delivery zones that Mid-Hudson uses can be located quickly—pushing the proper key or keys tips up all cards in that category.

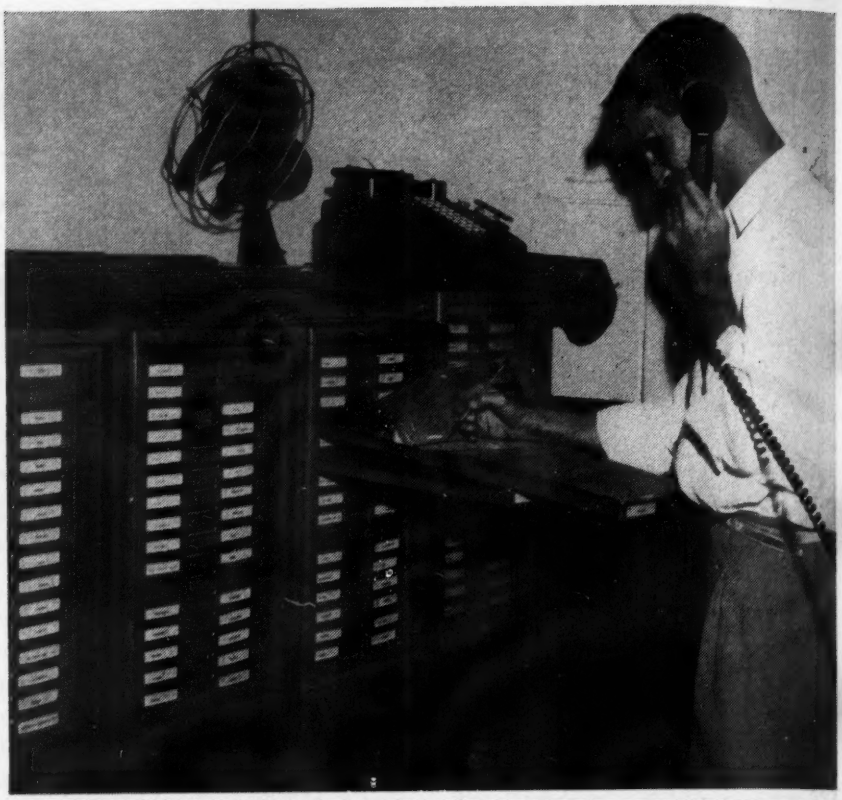
Mid-Hudson has used the Electrofile system for two years and feels that it represents a considerable improvement over the previous method.



Mid-Hudson exclusively for their burner service; 1,200 are on contract and 2,300 are "will-calls." Per call rates are $3 minimum for the first half-hour and $2 for each half-hour thereafter.

The company offers a Service Plan No. 1 for $25, covering annual clean-out, all service and parts, with 700 customers buying it at present. Plan No. 2 covers clean-out and service—no parts—for $18, with 500 customers signed up. A third plan offers a clean-out only for $12.

Much of the information about Mid-Hudson's burner service department and other phases of the company was furnished by James E. Bellew, Jr., operations manager, covering fueloil deliveries, oilburner service and installation, yard and operating personnel. He's one of a team, whose combined efforts contribute to the success Mid-Hudson has been accumulating since 1935. Others include: C. L. Stanley, vice-president in charge of heavy oil sales and wholesale accounts; Vincent Amato, office manager and assistant secretary; John Corcoran, assistant treasurer and credit manager.



A few picture *impressions of Mid-Hudson's oilburner service set-up. Chief service clerk, Jack White, is taking a service call in the top view; he's checking a permanent service record prepared for every burner which the company services. It shows type and kind of equipment, previous service calls, complaints and corrections, plus any special information the serviceman should have.*

In the next illustration, *White relays a service call via an* RCA *two-way radio. He's using the 100 watt main station, which operates off an 85 ft. tower with antenna and permits communication with six service and/or three fueloil trucks; all are equipped with 60 watt mobile units. There also is a remote station at Mid-Hudson's Poughkeepsie bulk plant; this transmits through the 100 watt transmitter and is connected to it by a leased telephone line. Both offices and stations have communication to any truck and can communicate between offices only, if desired. A 60 watt mobile unit also is installed in Operation Manager James Bellew's car.*

Below this *is a typical company-owned, 1-ton, panel truck Mid-Hudson uses for service.*

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1. Cash in on the big market for changing obsolete 3-wire systems to 2-wire systems

2. Pile up profits by introducing and selling a popularly priced Outdoor Control System.

TURN PAGE TO LEARN HOW YOU CAN PROFIT

HEATING CONTROLS

M3

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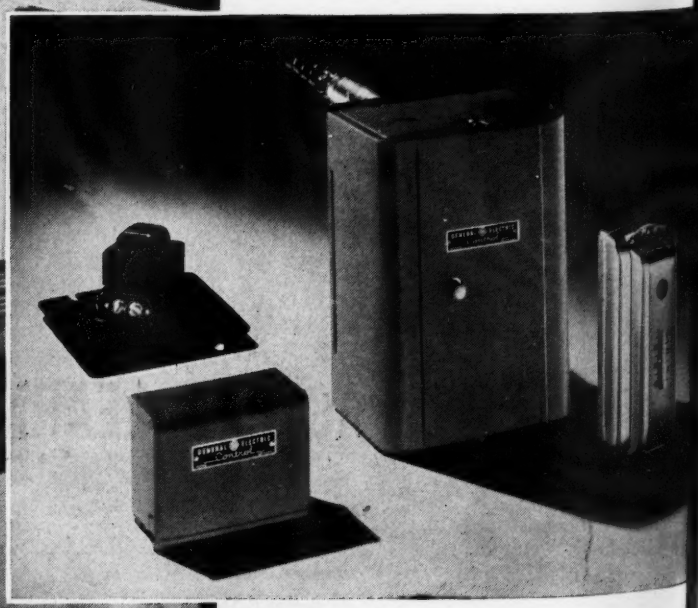
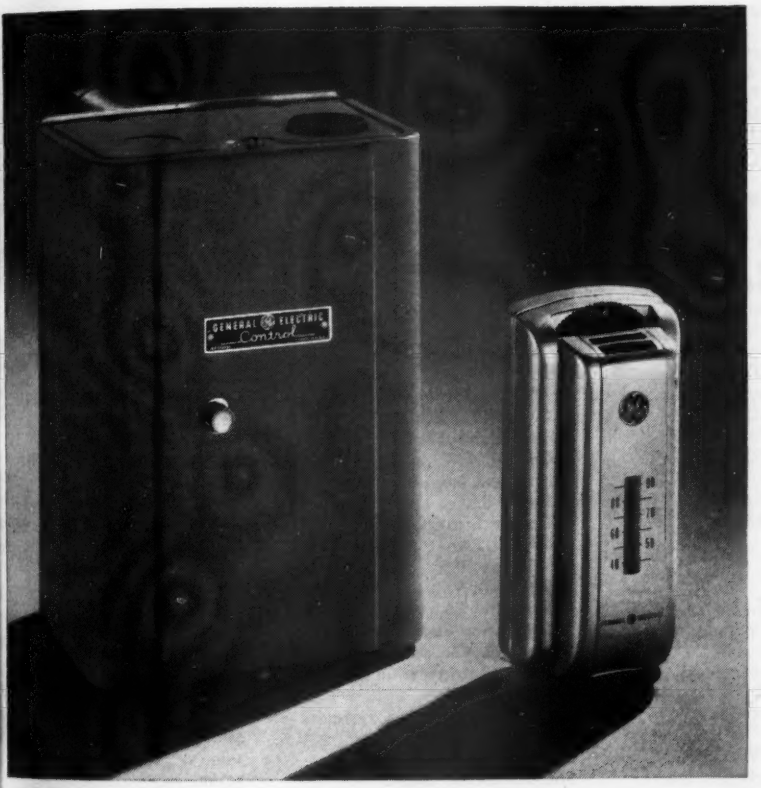


M2

MODERNIZATION KIT... Stack Switch and indoor thermostat team up to simplify your control sales



Here's another opportunity for you to make extra profits during the coming months: General Electric offers a new M2 Modernization Kit which consists of thermostat and stack switch. Use this packaged system to replace your customer's obsolete, inadequate 3-wire heating control system. Call your distributor today. Ask him how much money **you** can save by buying the M2 Modernization Kit under G.E.'s exchange plan. Your nearest distributor's name is listed on the next page.

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*Figured in terms of suggested resale prices.

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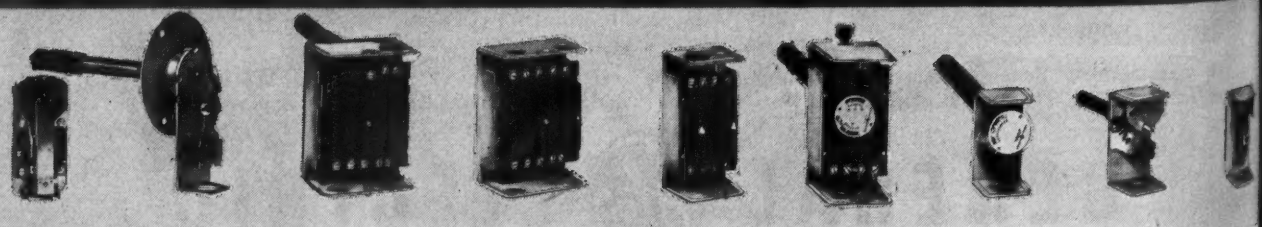

GENERAL ELECTRIC

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Causes and Corrections for gurgling hot water Piping

TROUBLESOME noises in the piping of a big forced hot-water job are described in a letter from B. M. R., Wilmington, Del. He writes:

"The installation is two years old, and consists of a hot-water boiler piped to three air-heating hot-water coils. Each coil is served by a motorized valve (modulating by-pass type) and has a 3" circulator installed in its return line.

"The coils and piping all are in the basement of the building, with a total height of 7½ ft. A 30-gallon expansion tank is in the boiler area. Automatic air vents are on the high points of the coil piping. The three air-heating coils are in ducts of the airconditioning system, and are 40 ft. from the boiler.

"A dual feed device, automatic, gives the system pressure of 12 lbs. With the pressure-reducing valve functioning normally, the gage shows a system pressure of 12 lbs., but the owner complains of 'gurgling' noises in the lines, heard in the basement and on the first floor.

"We tried several ways to purge in our efforts to eliminate air from the system. Finally we decided there are only two approaches to the problem. Since we had been unsuccessful in preventing the accumulation of air in the system, we decided the alternate method was to remove the air before it could accumulate. We planned to do this through the installation of an air scoop at the boiler and an auxiliary expansion tank immediately above the air scoop.

"While making a survey of the job for material to be ordered, however, our man suggested increasing the pressure to 25 lbs. to eliminate the noise.

"We adjusted the pressure regulating valve, and found that at 25 lbs. pressure the noise did disappear.

"Undecided if this was a temporary or permanent correction, with the owner's permission we left the system operating at the higher pressure. We knew from observation that the relief valve would drip during a heating cycle, and told the owner about this to avoid unnecessary service calls.

"The installation now has been operating at this higher pressure for two weeks, and for the first time in two years the owner is satisfied with the sound level. But he is concerned with the loss of hot water through the dripping relief valve.

"We thought of installing a relief valve that opens at 35 lbs. pressure, and spoke to a manufacturer about providing us with this.

"Results of the talk were unsatisfactory, for the manufacturer said the use of such a relief valve was contrary to generally accepted standards. The manufacturer's representative inspected the job and seemed to conclude it should operate well with as little as 5 lbs. boiler pressure. That idea was predicated on all the piping being within the limits of the basement, and

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the height of water required in the system. Under his supervision, we reduced the system's pressure to 5 lbs., and immediately had air noise trouble again. We increased the pressure gradually, and at 25 lbs. the noise disappeared.

"Don't confuse this gurgling noise with boiling, as the system operates at 180°F. maximum temperature and the noise is not confined to the boiler. The noise is best described as 'gurgling' that travels through the piping and can be heard at various points.

"Unfortunately the design of the boiler (side outlet) does not permit use of an airtrol fitting. We prefer to end the trouble without re-piping the system.

"Our specific question: Can you explain the presence of noise at low pressures, and the disappearance of this noise when the pressure is increased to 25 lbs.? If we understood precisely what causes the noise at low pressures, then we could solve the problem."

Though this is no consolation to him, the problem faced by B. M. R., Wilmington, is being encountered more and more on modern forced hot-water installations. He describes the problem excellently in the above letter.

Corrective Steps

First, comments on some of the points he makes in his letter:

1. He gives no idea of the size of the heating plant in terms of gph firing rate, horsepower of boiler, etc. But his describing the system as having three 3" circulators, three zones, and modulating-type motorized valves conveys the idea that this is a commercial or industrial heating plant of impressive size. On that basis, his saying it has an expansion tank of only 30-gallon capacity is indeed surprising! We know of systems, similar in nature to the one he describes, which need three 60-gallon expansion tanks for best performance!

Operation of the circulators may cause a drop in the pressure in the 30-gallon expansion tank, in a way that will be described presently. If it does, then the use of a much larger expansion tank from the start would have avoided the trouble. Also, using much greater expansion-tank capacity would permit operating the system at unusually high pressure without any drip of water from the pressure-relief valve during a period when the system's temperature rises to maximum.

Second comment: Some engineers believe it is dead-wrong to operate such a system even temporarily in a way that causes water to escape from a relief valve during a heating cycle. Relief valves used on hot-water boilers are not intended to work that way. Working them that way even for a short time causes them to fail to close dead-tight when they should. Failing to close dead-tight, they permit water to escape from them steadily regardless of the pressure on them.

The trouble is contagious as far as an automatic feed valve or pressure-regulating valve is concerned. This valve also soon loses its ability to close dead-tight, when overworked either by intermittent dripping from the relief valve, or by steady leaking of the relief valve. Both valves soon will need repairs, or more likely replacement, if

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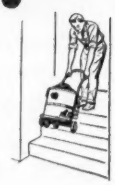

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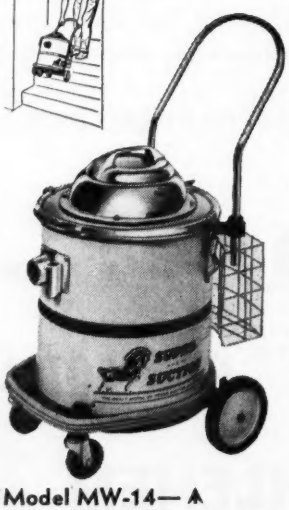

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(a) the system loses water daily for lack of an expansion tank of adequate size for the system, or (b) the system loses water daily because it is operated at unusually high pressure, but is not equipped with unusually great expansion-tank capacity to match the unusually high pressure.

Third comment: The relief-valve manufacturer is correct in opposing the idea of ending trouble by switching to use of a relief valve that opens at pressure higher than 30 lbs. Low-pressure hot-water heating boilers are intended to have relief valves that open at 30 lbs. pressure, not at any higher pressure.

Fourth comment: The equipment dealer who wrote the letter is certain that boiling of water within the boiler does not cause or contribute to the trouble. He knows this, he says, because the system operates at 180°F. maximum temperature. He may be correct about water not boiling in the boiler on this job. But in general a reading of 180°F. taking from a thermometer at the top of a boiler does not eliminate the possibility of water boiling in the boiler; water may be boiling in the hottest parts of the boiler, which may be greatly hotter than the 180°F. reported by the boiler's thermometer.

Fifth comment: A test showed that with the system in continuous operation, it made the gurgling noise when the boiler pressure was 5 lbs., but stopped making noise when the pressure was increased gradually to 25 lbs. That is highly important. If air traveling through the piping caused the noise at 5 lbs. pressure, simply increasing the boiler pressure caused the air to stop traveling—and no efforts to air-rid the system were needed.

The dealer can easily make absolutely certain the trouble is not caused by boiling of water in parts of the boiler. He should run the circulators while keeping the oilburner idle. If there's no piping noise when he does this, but there is piping noise with the burner running, plainly boiling of water in the hottest parts of the boiler causes the noise.

Any of many methods can be used to find the answer to the dealer's specific question about precisely why the system makes noise at low pressure but not at higher pressure.

One method is to work on a possibility previously suggested. Find out if the operation of the circulators causes a considerable drop in pressure in the 30-gallon expansion tank, inviting the stored air out of the tank and causing it to travel through the piping and make the noise.

To do this, install a pressure gage in the line to the expansion tank; read it with the circulators idle, and with the circulators running. If the expansion tank is pipe-connected to the input side of the circulators, the suction they develop in their input piping may be transmitted to the tank. The pressure in the tank will be much lower with the circulators running. If that seems to be the cause of the trouble, use ½" copper tubing to connect the expansion tank to the top of the boiler (the dealer's letter says the three 3" circulators are in the return lines of the air-heating coils they serve, thus it follows that they push return-line water into the boiler).

Install a pressure gage at the input

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side and output side of each of the three circulators; install six gages, range up to about 50 lbs. To do this speedily, drill and tap 1/8" ips openings in fittings near the circulators and screw the gages into the openings.

With a circulator idle, the same readings will appear on the two gages at its input side and output side. Start the circulator. If it develops a startlingly high difference in pressure, that contributes to the trouble. It is rushing the water through its circuit at an excessive, needlessly high, velocity.

Causes of this include (a) circulators greatly oversize and providing too high a pressure difference for the circuits they serve, or (b) undersize piping, together with proper circulators, or (c) excessive pressure-drop through the air-heating coils together with proper piping and proper circulators. Pressure gages, located properly in the circuit, will help ascertain which of these possibilities is the cause of the trouble.

Of course, the dealer can operate the system at a minimum pressure of 25 lbs. without causing water to drip from the relief valve. To accomplish that, all he has to do is add to the system enough capacity of properly connected expansion tank. But that's dodging the assignment of diagnosing the trouble accurately and providing precisely the needed remedy for it.

Two thermometers will throw light on the trouble also. Install one in the input line to one of the air-heating coils, the other in the output line of the same coil. Probably the coil will serve adequately if the hot water passing through it undergoes a 20°F. temperature drop.

Use a pressure gage at each automatic air-eliminator to make certain it is under pressure even when the circulators are running.

In overall, it seems that the trouble on this job may be caused by one, or by a combination of several, of these factors: undersize expansion tank; expansion tank piped improperly to the system; excessive pressure-drop through the system's piping or air-heating coils; oversize circulators, or circulators not matched to the system they serve.

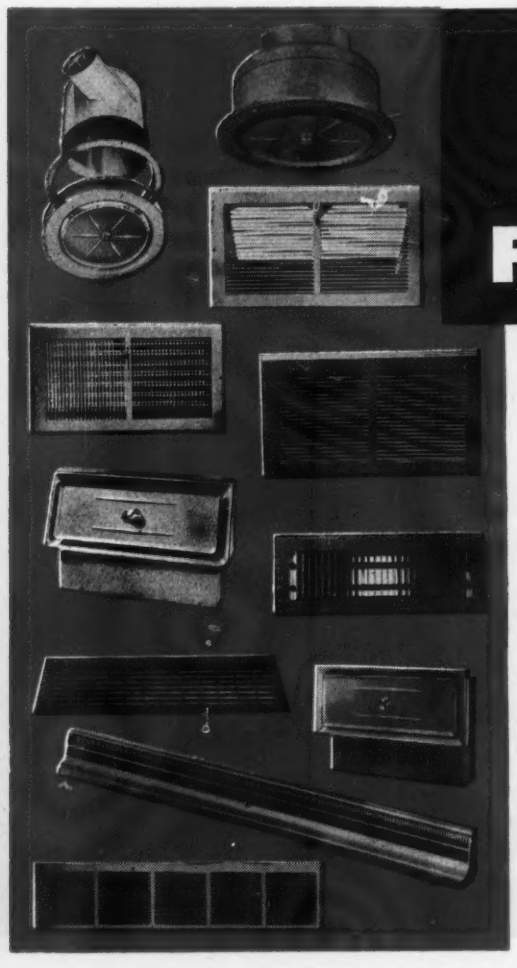
Readers' Problems

Q. On p. 118 of your June issue, you say that the "Firetron" scanner cell does not report firebrick heat as flame heat, yet should not receive considerable heat from hot refractory material of the firebox. Please explain because I do not understand this fully.

M. W. S., Ottumwa, Ia.

A. The following, together with details in the feature article that interests you, should make things clearer to you.

Suppose you are in a dark room and



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Char-Gale has them all!

DIFFUSERS—REGISTERS

in styles and sizes for every installation

One source for all the registers you need . . . that's Char-Gale! Perimeter installations . . . conventional installations . . . forced air or gravity . . . you name it . . . and Char-Gale has it. That's because Char-Gale manufactures a complete line of floor diffusers, baseboard diffusers, ceiling diffusers, wall diffusers and out of the wall diffusers, as well as conventional registers and vents. You enjoy the benefits and convenience of Char-Gale's packaging program, too!

Char-Gale also manufactures a complete line of galvanized and aluminum pipes and fittings for heating and cooling.

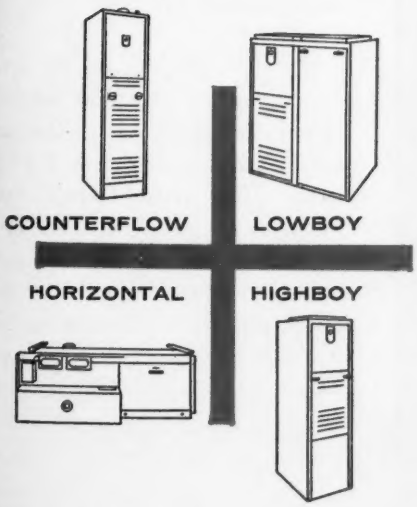
Rapid, nation-wide delivery service by Char-Gale's own fleet of trucks means prompt delivery direct to you. Reduces your inventories to save you money and space.

Char-Gale MANUFACTURING COMPANY
ANOKA, MINNESOTA

"Rheem has everything ...and then some!"

...says woman heating contractor

Recently at a business awards dinner given in her honor, Mrs. Ione Houston of Des Moines, Iowa, paid high tribute to Rheem's profitable line of furnaces and the important part it played in helping her set new sales records.



Remember, there's a Rheem model and size to fit every furnace requirement.

Mrs. Houston stated, "*As a businesswoman, I'm interested in two things: customer satisfaction and profits. Both are vital to my heating business. I relied on Rheem, and it really paid off! The Rheem line of furnaces has met all of my expectations—and then some! When a heating contractor makes full use of Rheem sales help, and takes advantage of all the favorable features included in the Rheem line—then sales come naturally, and so does customer satisfaction.*"

This competent little lady, who has made a name for herself in an industry dominated by men, knows what she's talking about. For under her guidance the C & H Home Service Company, featuring Rheem furnaces, has set new records for both sales and profits, since she became general manager.

You, too, will find that Rheem has everything a heating line should have. National acceptance, recognized quality—*and*, there is a Rheem model and size to fit every furnace requirement. Call your Rheem wholesaler soon and let him show you how Rheem can mean new sales and greater profits in *your* heating business.

Rely on Rheem for better products — bigger profits

RHEEM MANUFACTURING COMPANY

SEATTLE • HOUSTON • CHICAGO • SOUTH GATE, CALIFORNIA • SPARROWS POINT, MARYLAND

fueloil & oilheat

your eyes are concentrating on a little 7½ watt bulb that is blinking on an off. Turn on a steady 100 watt bulb, close to your eyes. They will be affected much less by the blinking light given by the 7½ watt bulb.

Similarly, the "Firetron" intended to respond only to flickering light can be blinded by relatively strong light (or heat) not of a flickering pattern.

Even if your interest is only of an academic nature, you can obtain complete details about this by writing to the manufacturer of the "Firetron"—write to Combustion Control Division, 718 Beacon St., Boston, Mass.

Q. A Brattleboro, Vt. burner dealer relates—your June issue p. 140 of "Readers Problems" department—that several of his burners oil soaked their boilers by continuing to run after their ignition systems failed to light the oil on start-ups. I must admit I've had more than my share of the same trouble. My servicemen must be making the same mistakes.

Precisely what do you do to test a stack control to make certain it will stop a burner in 90 seconds when the ignition system fails to work during an attempted burner start-up?

L. N. F., E. Lansing, Mich.

A. Usual practice is to remove a stack control from the smokepipe, gently without jarring it. Wire it or otherwise fasten it so that it's not tipped improperly.

Keep your eye on the second hand of a watch, then start the burner. It should stop "on safety" in a short time—in 90 seconds for most stack controls. It should do this because the heat-sensitive element of the stack control, which you removed from the smokepipe, feels no heat from the flame.

Testing a burner which has a nozzle-line solenoid valve, make the test with the stack control in place (the improvement lies in not touching the stack control at all). Prevent the solenoid oil valve from opening by undoing one of its wires, or by simply removing a screw and removing the solenoid coil from the valve so that it can't open. There'll be no flame when you start the burner, therefore it should be turned off promptly by the stack control.

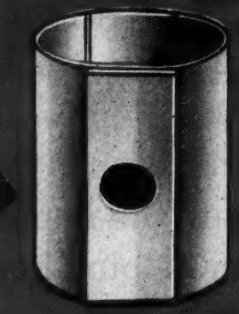
Q. Can speeding up the squirrel-cage blower of a ten-ton summer air-conditioner make the overload protector knock out and stop the blower motor? If so, should I install overload protector heaters of, say 20% or 25% higher amperage ratings? The motor is running exceptionally cool, but is stopped by its overload protector several times a month. It is polyphase. Overload protection is provided by its magnetic starter.

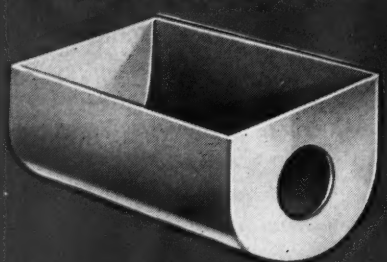
O. Y. D., Milwaukee

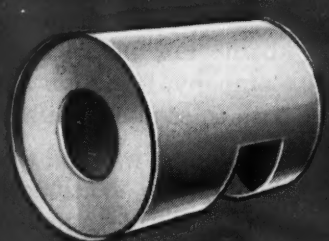
A. Yes, if you speeded up the blower by switching or adjusting belt-drive pulleys, you increased the motor load. As only borderline trouble is the result, you can end the trouble most easily simply by slowing down the blower slightly. Slow it only 5 to 10% of its present shaft speed.

If you don't want to do that and are certain the motor is running exceptionally cool, then place a bet on the

the RIGHT STEEL for your COMBUSTION CHAMBERS







Sheared to Size—Less Scrap
Save Time—Cut Costs

The *right* steel makes all the difference in your oil heat combustion chambers. That's why it pays to use Ingersoll *heat-resisting stainless* steel!

It's easy to fabricate—because it has exceptional forming qualities.

It withstands high temperatures—because its analysis is correct.

It's uniform in quality—because Ingersoll specializes in producing this type of steel.

It comes to you sheared to your specified blank sizes, or multiples thereof, depending on size—so it saves you time, money and scrap.

Specify Ingersoll—and profit by the difference!

Write, wire or phone for details

ADVANTAGES OF HEAT-RESISTING STEEL COMBUSTION CHAMBERS*

- No breakage in shipment or handling
- Lighter weight lowers freight costs
- Quicker heating—greater efficiency
- Cleaner heat—better temperature control

*Ingersoll does not fabricate combustion chambers

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Borg-Warner Corporation
310 S. Michigan Ave., Chicago 4, Ill.
Plant: New Castle, Indiana

"Don't forget this Field Control, lad. No heating plant works its best without one"

Every day, new-comers to the heating business are being taught an old lesson: That there is no substitute for good workmanship or good products. And for a score of years dealers have numbered Field Draft Controls among the products that are *good*, and for which there is no substitute. We are proud to have earned the good will of so many dealers for so many years.

You have put your faith in **field** *more than 15,000,000 times*

FIELD CONTROL DIVISION of H. D. CONKEY & COMPANY, MENDOTA, ILLINOIS

Affiliates: CONCO BUILDING PRODUCTS, INC. • Brick, Tile, Stone CONCO MATERIALS HANDLING DIVISION • Cranes, Hoists

REPRESENTED IN CANADA BY ONTOR LABORATORY LTD. 111 TYCOS DRIVE, TORONTO 10, ONTARIO

motor's ability to carry its present load without damaging itself, and shift to overload protectors of slightly higher amperage rating.

You really should be using a voltmeter and ammeter when you face motor problems and overload protection problems of this nature. Make certain low voltage, perhaps occurring only at times, is not causing the trouble. Make certain the lines to the motor each show the proper amperage, not greatly different or excessive amperage.

Q. Tubes of this firetube boiler failed in seven years and were so heavily coated with lime as to give trouble getting them through the tube-sheet openings when removing them. Water in this area is not hard. Chief engineer in the boiler plant, not well informed on chemistry has been dosing the boiler water heavily using his own version of boiler water treatment compound. Do you think he limed the tubes heavily and caused them to fail prematurely?

F. F. V., Bronx, N. Y.

A. You could be correct. Applied in proper, small amounts, certain boiler-water compounds protect boiler metal by giving it a thin, almost microscopic, coat of lime. Give a boiler a greatly excessive amount of such a compound, and its tubes will become so heavily coated that they will overheat and be ruined.

Q. I service oilburning equipment, and recently was called to service a horizontal rotary burner firing No. 5 oil at about 20 gph.

I was requested to make adjustments to clean up the flame, which was sparking and throwing droplets of oil against the walls of the combustion chamber, and against the boiler sections above, but I could not eliminate this condition by adjustments.

I would appreciate knowing what causes this and what can be done.

C. B. F., Laureldale, Pa.

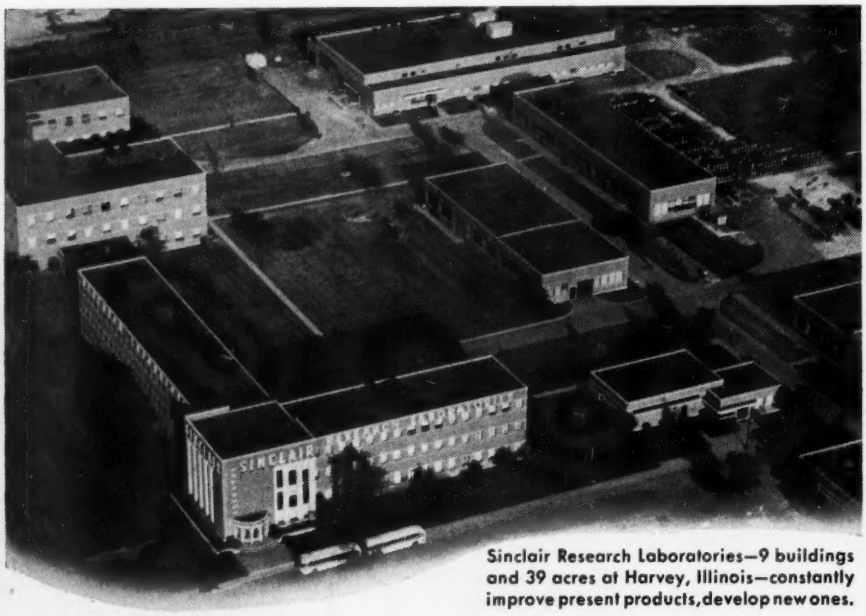
A. As you were asked specifically to eliminate the signs of poor atomization, we'll assume that earlier the flame burned properly. The most common cause of such deterioration in atomization lies in plugging of the burner's primary air passages, especially the air intake passages to the blower, with dirt and muck. Clean thoroughly all the passages through which the primary air flows. If you are lucky, you'll find the blower-air intake passages loaded with dirt, muck, and grease—and cleaning them will give you better atomization together with a bright, lively flame.

Finding that you have to go further, take apart the blower housing and clean it and the blower. Clean carbon and gum from the burner's air snoot or air nozzle.

Inspect the atomizing cup carefully. Replace it, if the atomizing edge is knicked or otherwise in poor condition, or if you cannot make it clean and in condition as good as new.

The delivery of heavier fueloil than was burned in the past could be the only reason for the burner's starting to produce poor atomization. The fueloil now being delivered may need preheating. Discuss that possibility with the supplier of the fueloil.

(*Please turn to page 172*)



Sinclair Research Laboratories—9 buildings and 39 acres at Harvey, Illinois—constantly improve present products, develop new ones.

RESEARCH HELPS KEEP SINCLAIR FUEL OIL DISTRIBUTORS AHEAD...PROFITABLY

Distributors who sell Sinclair Fuel Oil profit more because continuous research makes Sinclair Fuel Oil a better product.

For example, ingredient RD-119®, discovered at Harvey, helps make Sinclair Fuel Oil an exceptionally clean-burning, high quality product. Result – service calls are cut to a minimum, consumer good will is increased.

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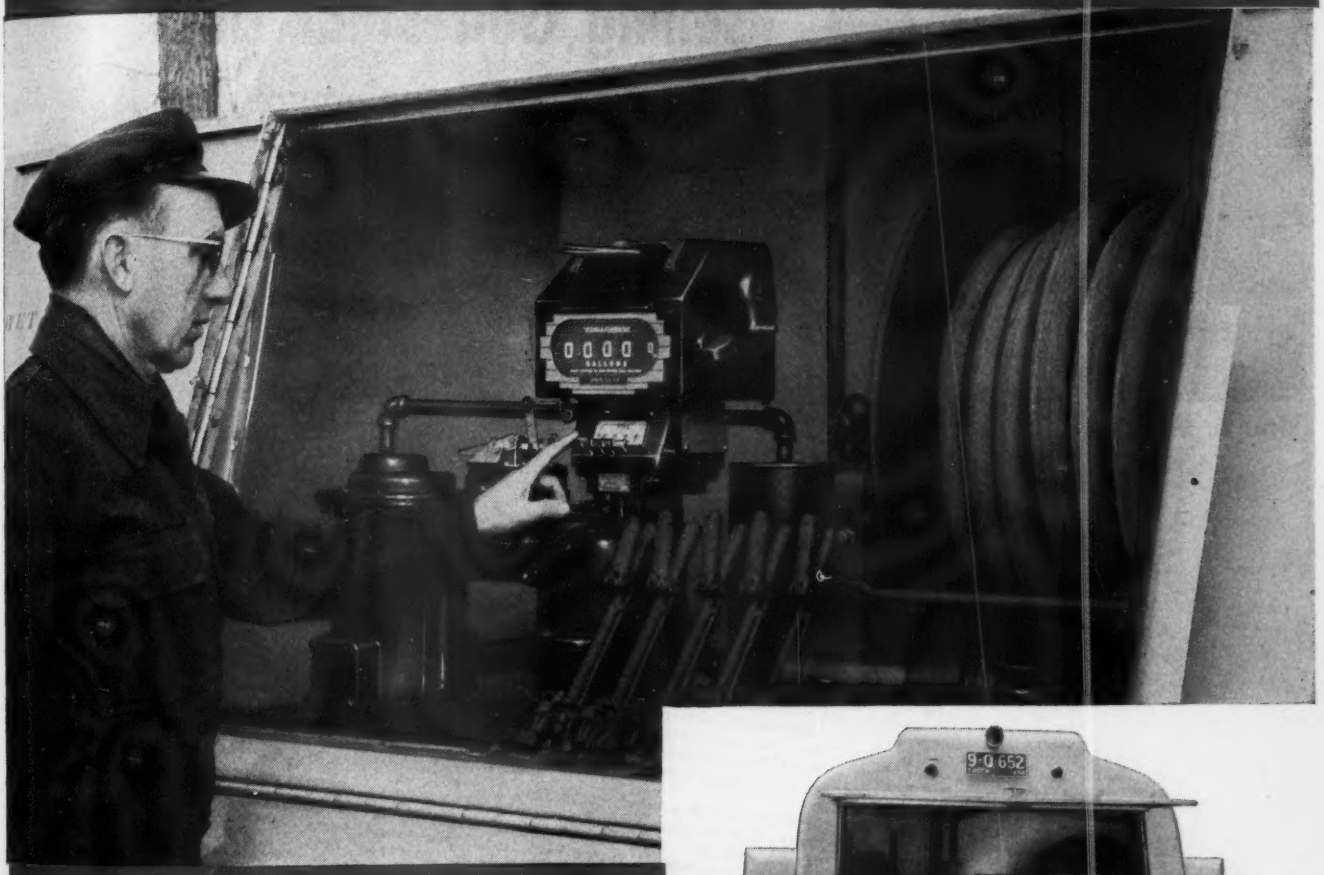
SINCLAIR FUEL OIL *with* RD-119®

New QUALITY TOKHEIM MODEL 635

Tank Truck Meter

with pre-set flow control



controlled, 2-stage flow delivery cushions automatic shut-off!

Set gallonage in advance—you need never leave the nozzle! Tokheim PRE-SET FLOW CONTROL does the rest! Stays on full flow longer—saves pumping time. Smoothly, automatically reduces to secondary flow of 11 g.p.m.—within three seconds of full delivery. Gently cushions stop—eliminates shock. Saves strain on pipe-fittings and meter—prolongs equipment life. Accurately records gallonage delivered. Ticket Printer optional. Especially designed for tank trucks, bulk plants, airports, industry. See your Tokheim representative or write factory for literature and prices on this new Model 635.

A Tokheim dual meter installation. The extraordinary flexibility of Tokheim equipment permits such installations to be made with maximum ease.

CHECK THESE IMPORTANT FEATURES OF THE NEW MODEL 635!

- 40 g.p.m. capacity—11 g.p.m. in last 3 seconds.
- Pre-set flow control determines gallonage—frees the operator—cushions shut-off.
- Standard 1½" flanged inlet and outlet of meter, air separator and back-pressure valve.
- Same positive piston displacement-type measuring unit as in Tokheim Computer Pumps.
- Veeder-Root Register and Totalizer—exclusive, lever-type wheel settings.
- Air separator inlet and strainer are reversible.

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Wm. D. Maney

"25% increase in gallonage in my first year selling Gulf Solar Heat"

reports this young progressive New England Dealer

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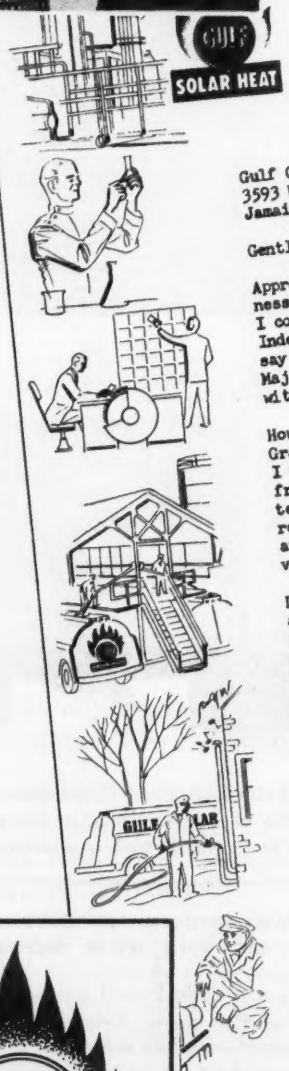
WILLIAM D. MANEY, PROP.

PHONE 5911 NORTHBORO, MASS.

THE WORLD'S FINEST HEATING OIL



Gulf Oil Corporation
3593 Washington Street
Jamaica Plain 30, Mass.

Gentlemen:

Approximately three years ago, I purchased an existing Fuel Oil business which I still operate under the same name, Northboro Oil Company. I continued along with the same supplier, which incidentally was an Independent, and apparently for a period of time I was satisfied. I say this because during this time, I had been approached by several Major Companies;also other Independents, but again seemed satisfied with my present supplier.

However, after several calls from your Fuel Oil Representative, "Ray" Gray, I must admit that I seriously considered making a change because I was very much impressed with your Marketing Plan in general, which from my observation is the best in the business. I was especially interested in your Truck Painting Program and Direct Mail. Also, just recently, I have found some valuable credit assistance in this Manual, and the manner in which all of this material was presented to me was very impressive.

During the first part of July, 1955, I signed a contract with Gulf and shortly after, ordered a substantial amount of Direct Mail, stressing the Budget Plan, along with Solar Heat Calendars. Within four weeks my trucks were painted Gulf colors, and I am very happy to state that I have been more than pleased with the help and cooperation received from Gulf. Your Marketing Manual contains a wealth of information which is very valuable to a Fuel Oil Jobber such as myself, and I would be more than pleased to recommend your Company to any prospect who might want to contact me.

My gallonage is running way ahead of estimate to da[illegible] and 25% ahead of the previous year. Therefore, again I am very ha[illegible] to be associated with the Gulf Oil Corporation, and feel that you [illegible] supplimented on your excellent sales and operating aids contained in the Marketing Manual, which is second to none.

Very truly yours,

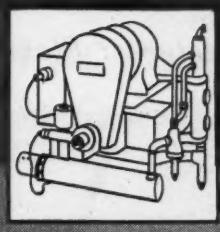
NORTHBORO OIL COMPANY, INC.

By Wm. D. Maney pres.

WDM/JSM

GULF
SOLAR HEAT
heating oil

GULF OIL CORPORATION
GULF REFINING COMPANY



COMMERCIAL & INDUSTRIAL oilburning

SECTION

fueloil & oil heat

NEW YORK

COMMERCIAL & INDUSTRIAL oilburning

Minneapolis-Honeywell new R478 Protectorelay

Latest M-H electronic safety System; Features: Flexibility, Versatility, maximum Safety

by

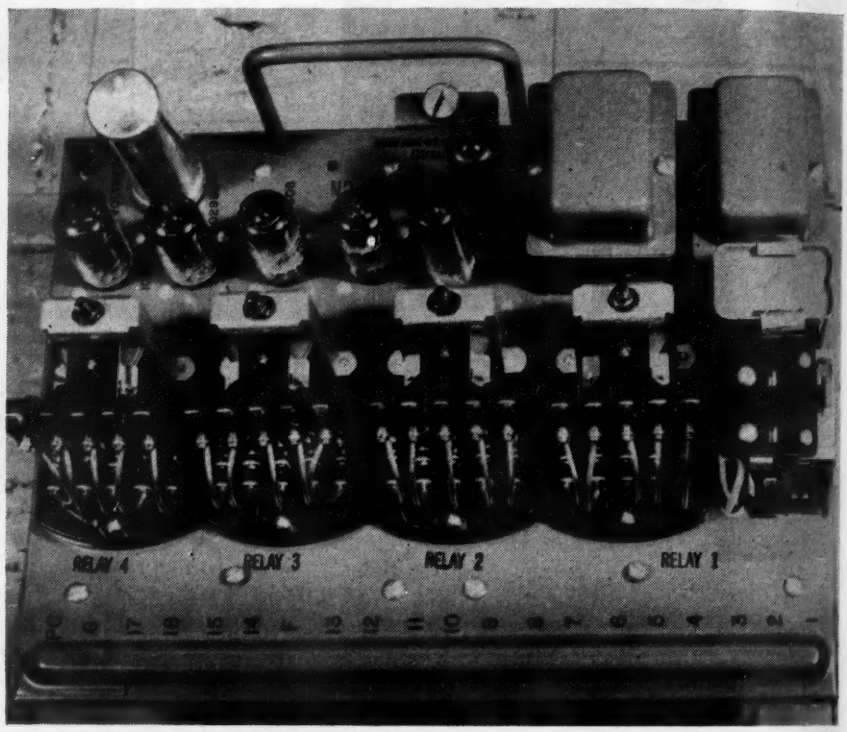
Jean L. Dupuis

GREAT ADVANCEMENTS in the field of commercial-industrial oilburners, particularly in the dependable and ultra-safe performance of such burners, may as the years go by set up 1956 as outstanding in the eyes of oilburner experts.

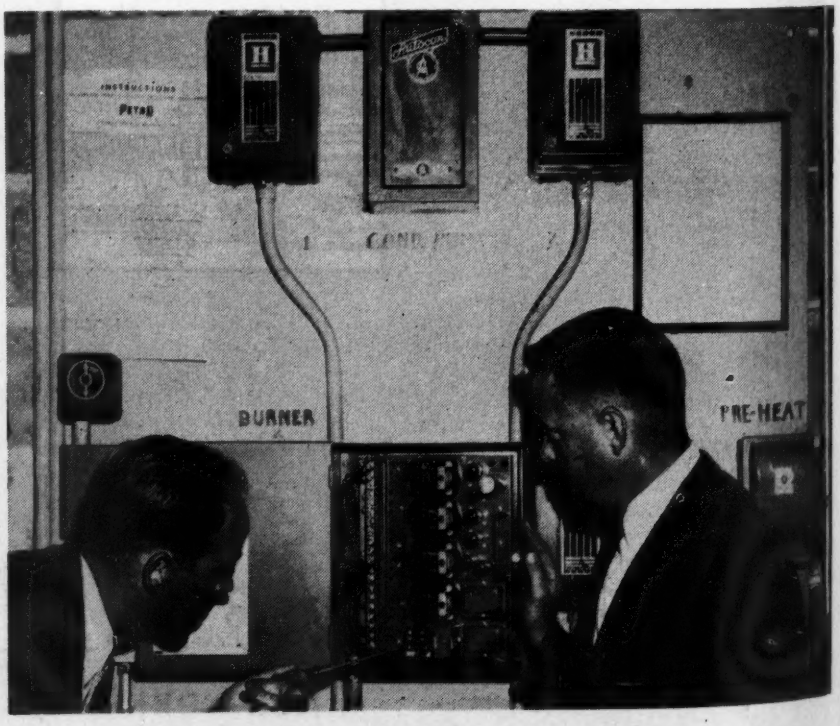
Early in 1956 the attention of oilburner experts became focused on a new Underwriters' Laboratories' 82-page book "Standards for Safety—UL 296, Third Edition" (covered in detail starting on p. 61 of the March 1956 issue of FUELOIL & OIL HEAT).

For several years prior to the publication of the new UL book, several important states and insurance organizations had been urging or forcing the use of more and more electronic safety control set-ups for commercial-industrial oilburner installations. Then the new UL requirements, spelled out in the book UL 296, settled matters on a nationwide basis. By dealing in terms of proved-pilot requirements and flame-failure shut-off timing of four seconds, the new UL requirements made the use of electronic safety controls mandatory for large commercial-industrial burners. Whether or not they preferred to do this, commercial-industrial oilburner installers had to provide their burners with electronic safety controls to meet the UL requirements for safety—for the first time, in 1956.

By 1956 the need for improved gas pilots for horizontal rotary-cup burners had been established in general. Several commercial-industrial oil-



Unmatched flexibility *in electronic flame safeguards is the big Minneapolis-Honeywell boast for its two new* R478 *Protectorelays. The two controls,* R478A *and* R478B *are identical except that the method used in proving flame causes two extra electronic tubes to be used in the* R478B, *shown in this photograph. The "*A*" model has four tubes, while the "*B*" model has six tubes. Four relays (see numbers in photograph) are on fronts of both panels. Both have a fifth relay (for component checking) located behind, not seen in this photograph.*

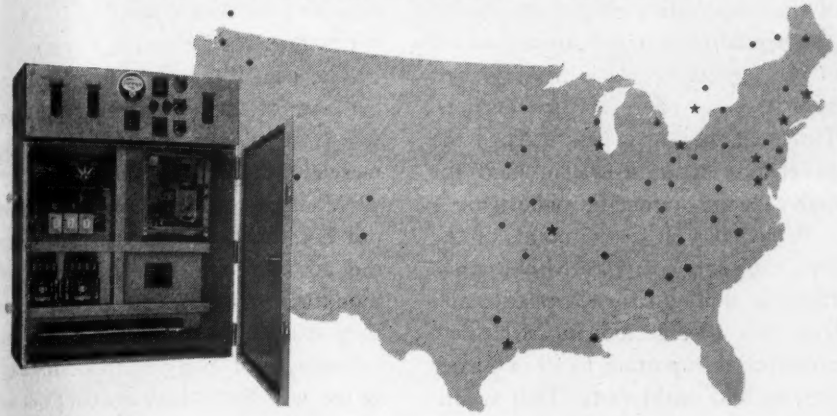


Protectorelay 478B *on an actual installation of a horizontal rotary-cup burner using No. 6 fueloil. Clean-cut control matches the other features of this clean-cut installation. Notice simplicity of the wiring set-up.*

fireye Control Progress

Burning Fuel Safely is Everybody's Business

Immediate Delivery of AC Panels Available from Coast to Coast



Rush jobs are nothing new to commercial-industrial dealers, but obtaining immediate action on requests for equipment to be used on these jobs is rare.

To meet this need, Fireye has complete stocks of AC Panel Control Systems — for all automatic commercial and industrial burners — available to you from coast to coast as an added service.

Fireye maintains warehouse stocks of complete panel control systems in San Francisco, Chicago, Cleveland, New York City and Boston, plus emergency stocks at over 50 district offices, and is prepared to meet your requirements NOW.

So, when specifications call for Fireye AC Automatic Panels during this Fall rush period, simply get in touch with your local Fireye office. Your Fireye engineer will quote and furnish from stock everything you need, along with drawings and wiring diagrams free of charge.

Fireye can offer this service because each Fireye Panel is packaged to meet a specific need, and includes all necessary controls, switches, relays, motor starters and other elements needed to produce a complete flame safeguard and programming system.

For every existing and planned automatic burner installation, there is a Fireye AC System to safeguard the entire operation. And, a stock of panels is as close to you as your nearest Fireye office.

Write the factory today for your free copy of Bulletin CA-22, which gives full information of Fireye Series AC Panel Control Systems for commercial and industrial oil and gas burners, plus data on additional Fireye services.

UL 296 Spurs Commercial Demand for Electronic Controls

The trend toward the use of modern flame safeguards and controls on industrial burners has quietly enveloped commercial burners as well!

Spurred by the impetus of the new UL regulations that go into effect in January, a growing list of leading manufacturers are using Fireye FJ-2 Primary Controls in combination with light oil, gas or combination burners. Such well-known firms as Boiler Engineering & Supply Co., Cleaver-Brooks, Orr & Sembower, Weatherall Engineers and York-Shipley are included.

These FJ-2 Primary Controls also have been used with thousands of existing burner installations. In addition, they are available as components in Fireye Packaged Panel Control Systems, which contain all elements needed for a complete safeguard and programming system.

When you specify Fireye for your commercial burners you not only will be ready to meet and surpass the UL regulations, but you will be gaining your rightful share of the best profit picture in the industry.

For full details on the complete Fireye line for both commercial and industrial burners, write to Fireye or contact your nearest Fireye office.

Dealer Doubles Profits In Conversion Job

"Our profits were at least doubled because we installed a Fireye AC Panel Control System instead of a conventional flame failure safeguard at the Stevens House, one of our leading hotels in Lancaster. It has worked fine, and I know the Stevens House Management is more than satisfied."

So reports J. Brame Witmer, owner of Oil Heat Service, an enterprising Lancaster, Pa., dealership. He, like so many other dealers, chose Fireye — and reaped a big dividend in profits.

The Fireye AC Panel Control System was installed by Oil Heat Service as part of a conversion from hand-fired

coal to automatic oil heat. A new S. T. Johnson #75 oil-gas burner was placed in operation at the same time.

So Mr. Witmer has done more than increase his profits and provide the Stevens House with the most modern flame safeguard system. He has proved again that modernization pays off in the sale of more than just a single piece of equipment — as it can for you.

Whether it be a commercial installation such as at the Stevens House or an industrial situation, Fireye has systems to meet every requirement—and at bigger profits.

E A fireye

COMBUSTION CONTROL DIVISION
ELECTRONICS CORPORATION OF AMERICA
Dept. C20-9, 718 Beacon Street, Boston, Mass.

In Canada, write Electronics Corporation of America (Canada) Ltd., Box 111, 98 Advance Road, Toronto 18

burner manufacturers, and one company specializing in the safety aspects of big burners, had brought out gas pilot arrangements far better than those used earlier for horizontal rotary-cup burners.

The rapid swing to improved gas pilots for big burners was caused by the increased use of electronic safety controls. Such controls provided monitoring of the gas pilots. Until an electronic device monitoring a gas pilot reported that it was 100% safe and healthy, the burner could not start firing fueloil. The electronic device would not provide a fast, positive okay every time for an installation having a weak, uncertain, fluttering gas pilot; that caused nuisance shutdowns, heavy service expenses, and complaints on untold numbers of installations. Seeing the light, burner manufacturers and experts at oilburner safety developed gas-pilot arrangements that gave strong, healthy pilots full of determination to burn properly. The presence of a strong pilot, full of character (of the proper shape to start out, and determined to maintain that shape) was reported dependably by a pilot-monitoring electronic device.

By 1956, then, the increasing use of electronic safety control set-ups for commercial-industrial burners had led to the appearance of a new type of improved gas pilot for such burners. This pilot was, of course, part of the gas-electric ignition system used for high-capacity automatic oilburners.

What goes on in the minds of the top engineers of the Minneapolis-Honeywell Regulator Company, and how this is reflected in M-H new products, is important to all oilburner experts and enthusiasts. That is understatement, considering the position that Minneapolis-Honeywell holds in the fields of automatic heating, air-conditioning, and controls in general.

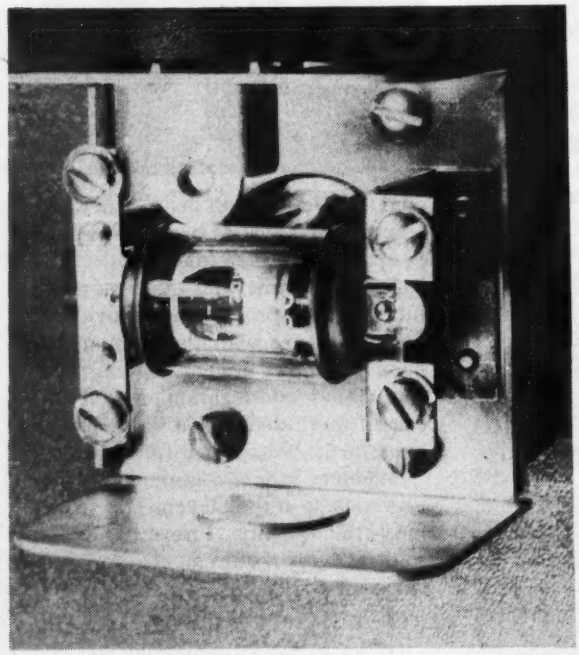
Bringing out its new R478 electronic Protectorelay for commercial-industrial burner systems in 1956, Minneapolis-Honeywell made big news, to state things mildly.

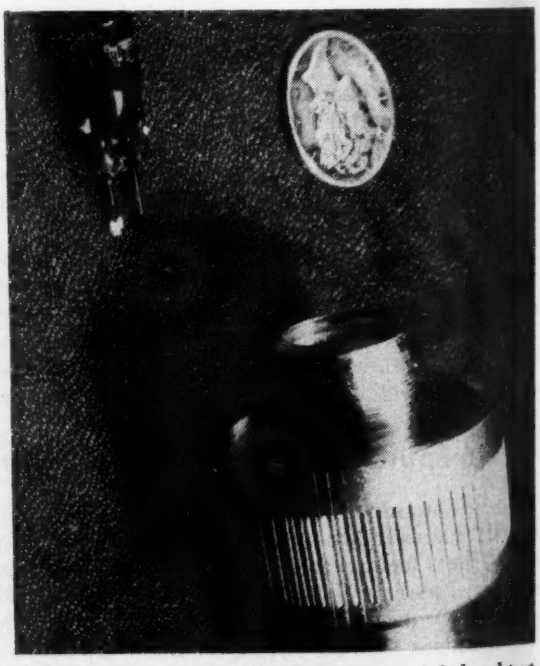
Knowing that any of several approaches can be used in starting out to design electronic safety controls for burners, experts wondered on which approach Minneapolis - Honeywell would place its bets, when it came time to bring out a new safety set-up for commercial-industrial burners.

The new R478 Protectorelay gives evidence of an M-H line of thinking which surprised many experts at commercial-industrial burner controls.

What the M-H design engineers did not do gives the surprises. They did not decide to use one method of monitoring flames electronically, after they studied the advantages and disadvantages of every method. Instead, in the new R478 they brought out an electronic control set-up that can use any of several flame-monitoring arrangements.

These M-H design engineers did not decide on one system of control cycling, after studying the many dif-



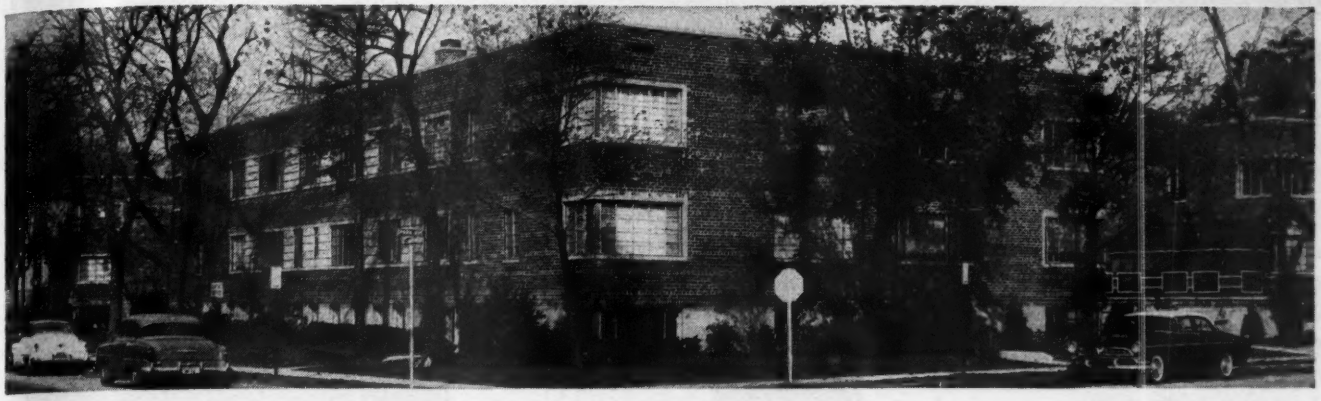


These three photographs *show the three completely different ideas that can be used to cause the* R478 *Protectorelays to "see" or report on flames. At the left is the photocell, widely used in electronic devices for "seeing" or reporting presence of light or flame; such a photocell has been used widely for years to monitor the oil flames of commercial-industrial oilburners (also for gun-type burners).*

Center photograph *shows a flame rod, widely used to report on proper burning of the gas pilot of a horizontal-rotary burner having a gas-electric ignition system. Where the flame rod is used, gas pilot must be in proper contact with it during an attempted burner start-up.*

At the right *is a lead-sulphide cell, in upper left-hand part of photograph. Compare it in size with the nearby dime. Mount for the cell is below dime. The lead-sulphide cell, a semi-conductor affected by rays from either a gas pilot or an oil flame, is used in a way that causes it to respond only to a flicker. It does not respond to steady light or steady heat, but does respond to flames (which all necessarily have a flicker to them). An important characteristic of this cell is that one cell can be used to report on both the gas pilot and the oil flame of an installation. It is located so that it "sees" both, when used in that way. But it does not necessarily have to be used that way.*

APARTMENT HOUSE OWNERS WILL LIKE THIS



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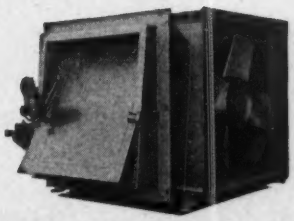
The advantages of mechanical draft are nowhere shown better than in apartment house heating. First, in capital investment, no tall, unsightly, expensive stack is needed. Furthermore, a big cut is made in fuel costs, because of the complete combustion from the Wing Draft Inducer. Finally there is a substantial reduction in maintenance costs. No brick chimneys to be pointed up or tall steel stacks to be painted. For additional facts and engineering data, use the coupon below:



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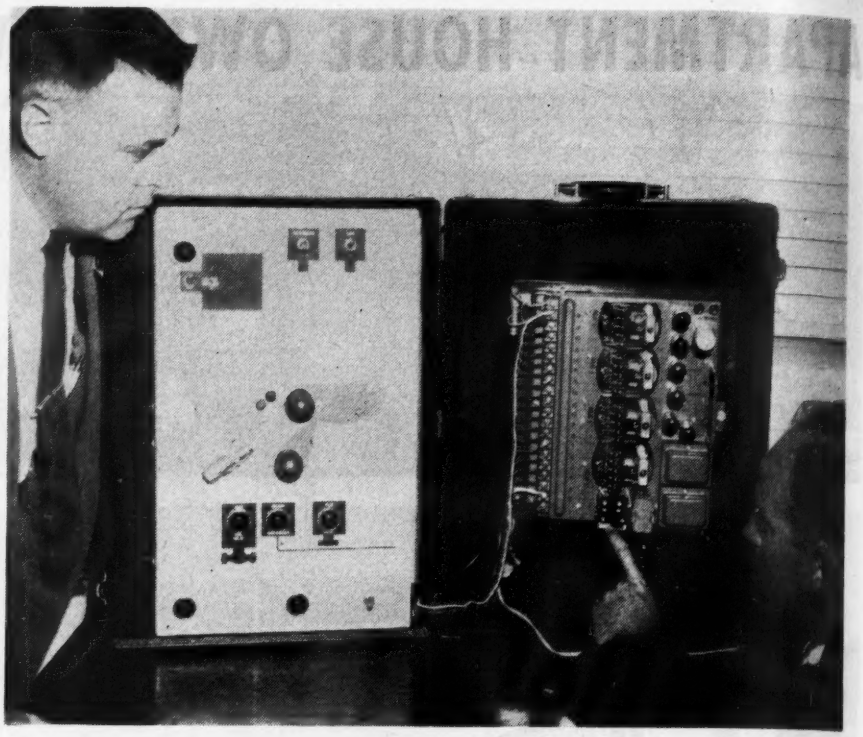
ferent types of cycling that could be used. Instead, in the new R478 they feature choices of cycling.

Following through the flexible motif, the M-H designers produced one control which can be used for input line voltages of 120, 208, or 240; one panel can be set up for any one of these input voltages simply by rotating an adjustable link on the back of the R478.

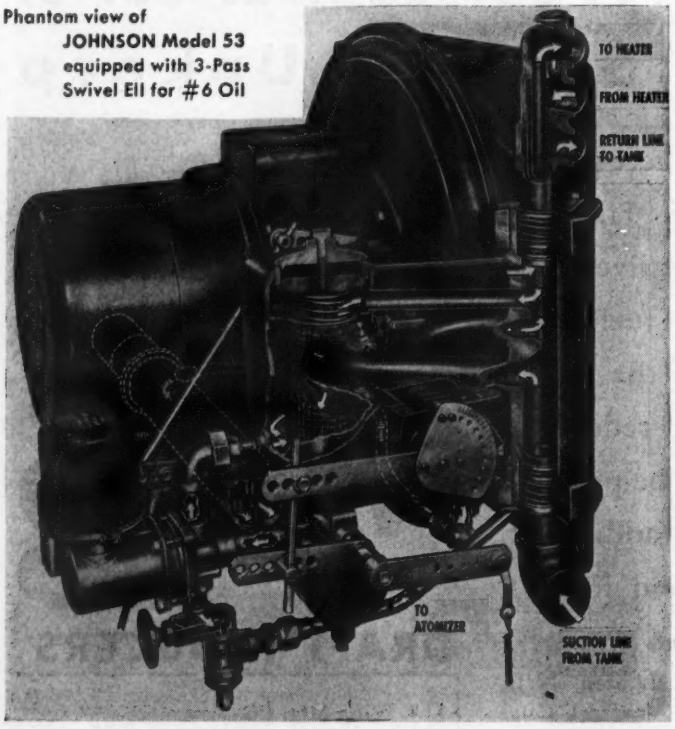
In the new R478 Protectorelay, the M-H experts declare they offer:

1. Unsurpassed application versatiliity. The R478 can serve large conversion oilburners of any type including for example gun-type, horizontal rotary-cup, air or steam atomizing. It serves oilburners, gas burners, and dual-fuel burners. It provides a choice in methods used to supervise or monitor gas pilots, oil flames, and gas flames. It serves the needs of automatic burners of all types, and burners which are started manually. It pro-



R478 display board, *studied by two* M-H *engineers, demonstrates fully the actions of both the* R478A *and* R478B *Protectorelays. Board can show the* R478A *functioning with a standard flame-rod and the* C7003 *photocell; also can show the* R478B *functioning with* Q283 *lead-sulphide cell monitoring both gas-pilot flame and oilburner flame. As a variation, the* R478B *may have a separate flame-rod for proving the gas-pilot flame.*

Phantom view of JOHNSON Model 53 equipped with 3-Pass Swivel Ell for #6 Oil



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The Fifty-Three is built in 8 sizes from 25HP to 500HP. It is available with Direct Drive or Belt Drive. Combination Oil and Gas models also are available. All models are fully automatic and equipped with finest electronic controls. For efficiency, easy servicing and all around economy, the Fifty-Three is the best oil burner buy on the market.

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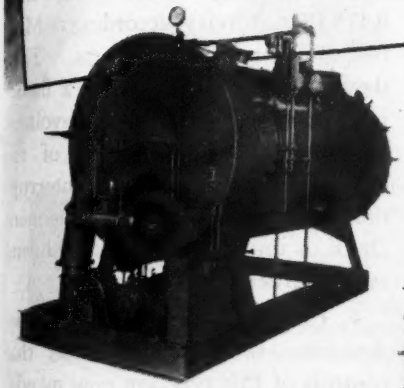
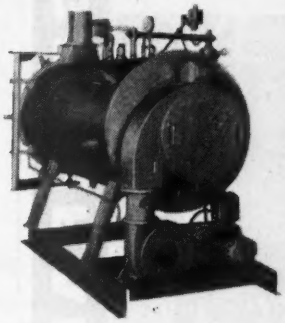
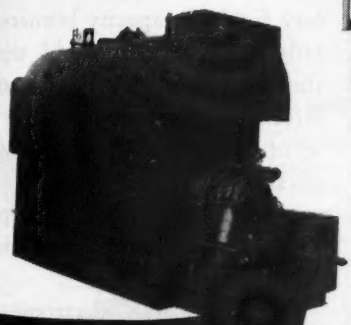


Steam-Pak Generators
(15 to 400 Hp.)

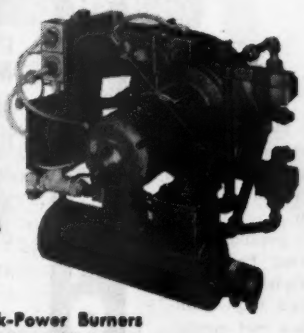


Steam-Pakettes
(10 to 50 Hp.)

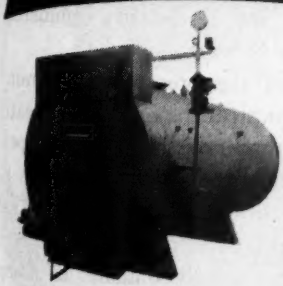


Fire-Pak Boilers
(30 to 450 Hp.)

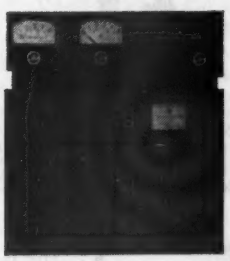
7 YORK-POWER profit makers



York-Power Burners
(45 to 400 Hp.)



Scot-Pak Boilers
(45 to 400 B.t.u.)



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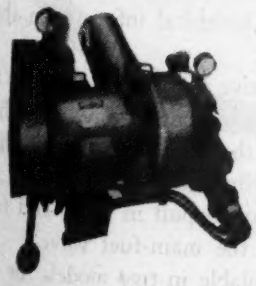

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vides any of several types of sequencing or cycling for automatic burners. It is used for burners firing steam generators, power plants, etc.

2. Unparalleled sequencing or cycling flexibility to suit the designer of the system. The simple use of different terminal connections permits the designer of the system to select: (a) prepurge periods of either 5 or 30 seconds, (b) proved or unproved gas-pilot ignition, or control operation suitable for a burner having electric-spark ignition with no gas pilot, (c) use of intermittent pilot, that is pilot on all the time the main flame is burning—or interrupted pilot which is turned off after the main flame is burning, (d) ignition-timing periods of either 15 or 60 seconds, (e) guaranteed low-fire start-up with switch to high fire, or flame modulated to match the load, either at the end of the ignition period or immediately after the main flame shut-off valve opens. For a burner using either gas or oil, one type of cycling or sequencing may be used for the oilfiring; the other may be used for the gas firing. The throw-over switch that selects the gas firing or oilfiring can alter the cycling automatically.

3. "Safety beyond all comparison" is the third big feature of the new R478 Protectorelay, according to Minneapolis-Honeywell experts. This, they go on, is the result of a flame-relay check every time the line-voltage power is applied regardless of the cause or length of the power interruption, plus a safe-start component check of the electronic circuit during every burner "off" period.

4. Fast, sensitive electronic flame-detection—the primary reason that controls of this type are now mandatory for high-capacity burners. Flame failure causes shut-off of the main-fuel valve practically instantly, as safety authorities require. On a start-up of an automatic burner having gas-electric ignition, the main fuel is turned on only after the gas pilot has been proved adequate by electronic monitoring.

5. Dependable electronic timing. The time periods for ignition, prepurge, and post-purge are all established by electronic tubes to eliminate timer-contact troubles. All tubes carry less than their maximum loads to assure dependable, long tube life. Honeywell pre-tested tubes are recommended, but standard commercial tubes may be used.

Each of the preceding five, numbered topics can be expanded greatly by a Minneapolis-Honeywell expert who is describing all the features of the new R478 Protectorelay. That holds especially true for topic #3, "Safety beyond all comparison." Long discussions can hinge on those words.

Here are additional features and points of technical information about the R478:

1. Positive flame-relay lock-out following main-flame failure. A flash of flame in the firebox, caused perhaps by after-dribble, cannot cause the flame relay to pull in again and turn on again the main-fuel valve.

2. Available in two models for 50-

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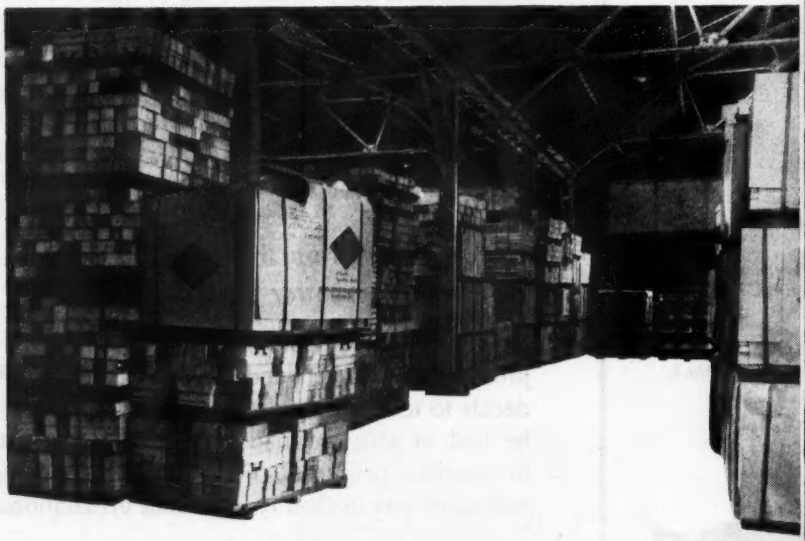

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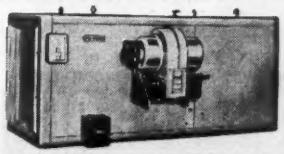

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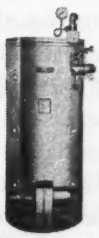
Compact size permits installation in attic, crawlspace, or can be suspended in basement or garage. Complete winter air conditioning unit. Reversible for easy installation.



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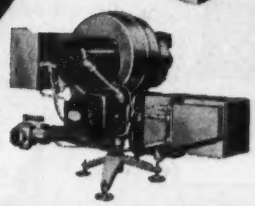
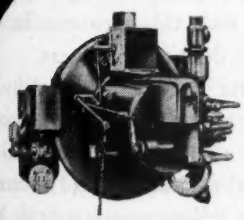


COMMERCIAL GAS-OIL BURNERS

Switches fuels instantly. For No. 2 oil or lighter, 5 to 20 gallons per hour. Gas capacity, 500,000 to 3,000,000 Btu input.

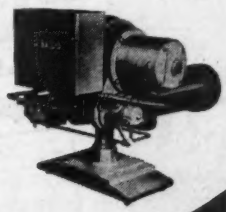
ROTARY OIL BURNER FOR HEAVY OILS



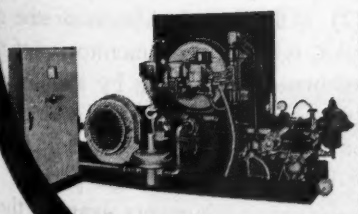
The Petro Thermal Viscosity principle for heavy oil control enables this burner to operate with the high viscosity fuels (Nos. 5 and 6) with complete dependability. Capacities from 8 to 200 gallons per hour. Convertible to gas-oil firing.

LOW PRESSURE BURNER FOR HEAVY OILS

No other burner like it. Advantages: fires any oil, No. 5 or lighter, full modulating flame. Capacity 3 to 30 gallons per hour.



FORCED DRAFT BURNER



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cycle and 60-cyle current; each model can be set easily for 120, 208, or 240 volts.

3. Is an all line-voltage control; has no low-voltage terminals.

4. Line-voltage normally-open alarm-circuit contacts — closing if burner stops "on safety," these can turn on a signal light or alarm bell.

5. Line-voltage contacts for guaranteed low-fire start-up.

6. Relay contact-surfaces are in vertical plane to minimize trouble caused by dirty contacts; contacts have sufficient pressure, and press-back or wiping action, to be self-cleaning.

7. Can be non-recycling after main-flame failure, thus conforms to regulations.

8. Available in surface or flush-mounted dust-tight cabinets, or without cabinet for installation in large cabinet with other relays, controls, etc.

9. Ambient temperatures-corrected safety-switch gives constant safety-switch timing over wide range of ambient temperatures.

10. Choice of 15-second or 60-second ignition timing; and the 60-second timing can be increased to three minutes.

11. Available with 15-second or 45-second safety-switch timing.

12. Provides a choice of arrangements to monitor gas-pilot flames and main oilburner flames.

The R478A employs the rectification method of monitoring flames—permits the use of a flame rod to monitor the gas pilot of an oilburner, and the use of a photo-emission photocell (cesium type) to monitor the main oilburner flame. The R478A is suitable for use with any flame-rectifying photocell or flame rod.

The R478B is made to use what Minineapolis-Honeywell terms its Flameguard method. This includes the use of a lead-sulphide cell. The cell is used, in one type of layout, to view both the gas-pilot flame and the main oilburner flame. It does not respond to steady light; in this control a flicker of 13 cycles per second provides maximum amplification of the signal reported by the cell to its electronic circuit.

The R478B also has provisions for proving a gas pilot separately using a flame rod; this idea can be considered for dual-fuel burners.

Experts at commercial-industrial burners and their electronic controls can list many advantages and disadvantages for use of (1) one lead-sulphide cell to monitor both the gas pilot and the main oilburner flame, (2) a flame rod to monitor the gas pilot, with separate monitoring of the oilburner main flame by a photocell, and (3) lead-sulphide cell monitoring of the main flame, together with flame-rod monitoring of the gas pilot.

Different arguments about the three arrangements carry different weight on different installations, depending on their characteristics.

Using the R478 Protectorelay, the man who selects the control decides which system of flame and pilot monitoring is best suited to the installation, and to the kind of performance he has in mind for it.

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Draft • Pressure • Differential
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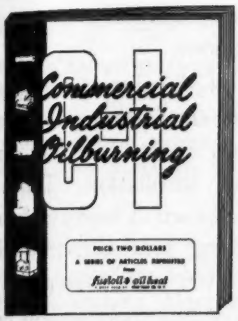

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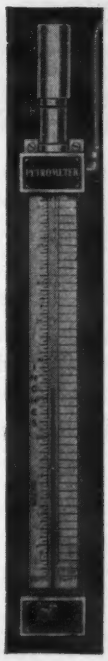

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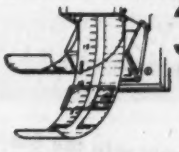
SIMPLE, TROUBLE-FREE DESIGN • • • No complicated and troublesome pulleys, springs, or other mechanical or electrical gadgets—the Petrometer gauge operates on the principle of static pressure—a principle that is as unfailing as the law of gravity. Its operation is similar to that of the familiar U-tube. Simple, rugged and dependable.

1

CONSTANT ACCURACY • • • The large vertical scale on the Petrometer gives you constant, accurate readings. The red liquid column is clearly visible—moves up and down as contents vary, just like the liquid level in your tank.

2

INTERCHANGEABLE SCALES • • • The scale on the Petrometer is readily removed or adjusted to correct for tank pitch or when changing liquids. No tools are needed.



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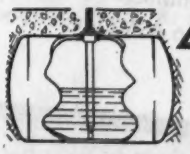
EASY INSTALLATION • • • Gauges can be installed on tanks above or below the ground and up to ¼ mile away. The tank assembly for the gauge can be installed even when the tank contains liquid. It can also be fitted in the tank separately to complete the tank work and the gauge connected any time later. Just tighten one simple connection and installation is complete.



4

Send for Bulletin PH today.

PETROMETER CORPORATION

43-22 TENTH ST., LONG ISLAND CITY 1, N. Y.

Additives for residual Fuel: What They are and their Uses

COMMERCIAL & INDUSTRIAL oilburning

The paper, "Chemical Additives for Residual Fuel," by Harris Thompson, of which a condensation is here presented, was one of a series of papers read at the second annual OHI Commercial-Industrial Oil Burning and Equipment Workshop.

A condensation of a Workshop paper on a Profitable Service Program was published in these pages last month. A third, on Ethics in Engineering, will appear next month.

IN THE EARLY DAYS crude oil was refined by a relatively simple distillation process, producing gasoline, kerosene and residual oil. Without critical demands, these products had relatively broad range specifications. Today crude oil refining is extremely complex, with products manufactured to exacting specifications.

Residual oil, the part which remains behind in the distillation process, formerly came almost entirely from straight run distillation. Today it usually is composed of heavy ends from various refining processes, frequently selling at a lower price than crude oil.

Today's residual fuels present problems by tending to form sludge and water-emulsions, producing imperfect combustion. Many of the causes of troubles experienced do not exist in the fuel as manufactured, for it contains only small amounts of sludge with water, which is thoroughly and uniformerly dispersed, giving no trouble if burned immediately. After standing, the original sludge settles out forming tank deposits, and frequently new sludge forms.

Original harmless water content may be increased by condensation from normal tank breathing, leaking heater lines or other sources. The results are objectionable viscous water-oil-sludge emulsions, usually in non-uniform sticky masses, reducing tank storage space, plugging lines, filters, screens, nozzles and causing poor combustion.

Ash and sulfur content, the carbon-hydrogen ratio, carbon residue and viscosity range are inherent characteristics. Refining practices are causing increases of these objectionable ingredients in fueloil. Improved handling facilities, preheating and chemical additives have permitted continued increases in the use of lower grades of fuel.

In a very broad sense an additive for residual fuel is a chemical or blend of chemicals which either gets an operator out of trouble or prevents him from getting into trouble.

There are two use troubles expressed in terms of areas. There are those which occur in the storage tank,

4 REASONS
Why M & L Fuel Oil Heaters will serve you well!

1. EXPERIENCE — Year after year M & L has made important contributions in solving fuel oil heating needs. Results are world wide acceptance and preference.
2. DESIGN — A complete range of styles and sizes at a lower price per unit take care of every standard fuel oil heater application.
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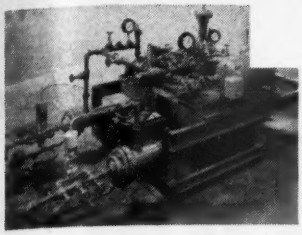
4. WORKMANSHIP — Highest quality is built into every M & L Fuel Oil Heater by craftsmen who know their job.

• M & L Fuel Oil Heaters comply with the Standards of the Fuel Oil & Water Heater Manufacturers Association. When required they can be built to ASME code requirements at a small extra charge.

Write for latest Fuel Oil Heater Catalog #743

Manning & Lewis Engineering Co.
28 Ogden Street Newark 4, New Jersey
M&L
170
SALES REPRESENTATIVES IN PRINCIPAL CITIES

Prepare heavy industrial fuel oil for combustion



With an EAGAN "Pre-Packaged" Fuel Oil Pump and Heater Set

Because an Eagan unit is "PRE-PACKAGED" . . .

- **it is delivered ready to operate**
- **it is easy to install**
- **it eliminates combustion difficulties caused by improper field asembly**
- **it works perfectly when you turn it on for the first time**

Eagan units heat to 300°F., pump to 400 spi and have capacities to 3,000 gph. Shown above is an Eagan Duplex Electric Set—note accessibility of parts and steam and control piping. Other models are the Duplex Steam Set, Duplex Electro-Steam Set, and custom-built sets.

Ask about EAGAN . . . today

WALTER H. EAGAN CO., INC.

Mfrs. of condensate, vacuum, turbine, boiler feed, centrifugal and proportioning pumps and fuel oil pump and heater sets.
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2339 Wallace Street, Philadelphia 30, Pa.

Expert Advice When You Need It

This new revised edition of OIL BURNERS by Kalman Steiner, will provide you with complete information on the most modern electronic oil burner control devices.

You'll find the answers you need in the pages of this handy handbook on "Oil Burners." Topic after topic is discussed in the twenty-two chapters and descriptions, data, diagrams and charts covering all major types of oil burning equipment.

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Please send your remittance and order to:

FUELOIL & OIL HEAT

2 West 45th St. • New York 36, N. Y.

SAFETY SWITCH THAT SHUTS OFF FUEL IF BLOWER FAILS

Protection for Oil Burners • Industrial Ovens • Power Gas Burners

WHAT IT DOES

The Dewey Safety Air-Flow Switch protects against opening of fuel valve until fan is up to speed.

Insures purging of furnace before fuel valve opens. Closes fuel valve if fan slows up or stops. Flashes danger signal if fan or fuel stops. Safeguards against danger from gas fuel failure when used with safety shut-off valve.

Thousands sold. Factory Mutual and Underwriters Laboratories Approved. Standard equipment on leading products. Write for prices and literature.

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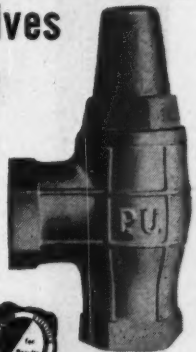
Dewey SAFETY AIRFLOW SWITCH

Preferred Anti-Syphon Valves *Meet Every Code*



Non-Adjustable—Angle Type for convenient installation. Heavy Bronze Construction. Approved by Underwriters' Labs., Inc.

TYPE A—1¼" to 3". Maximum capacity to 1000 G.P.H., with #5 and #6 oil.

TYPE B—¾" and 1". Maximum capacity to 100 G.P.H., for #1 to #5 oil.

TYPE C—⅜" and ½". Maximum capacity to 30 G.P.H. of #1 to #3 oil.

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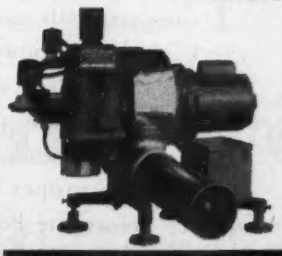
1860 BROADWAY Dept. OH NEW YORK 23, N. Y.

NEW IMPROVED

RAYFIELD-STAFFCO AUTOMATIC



No. 5 OIL BURNERS

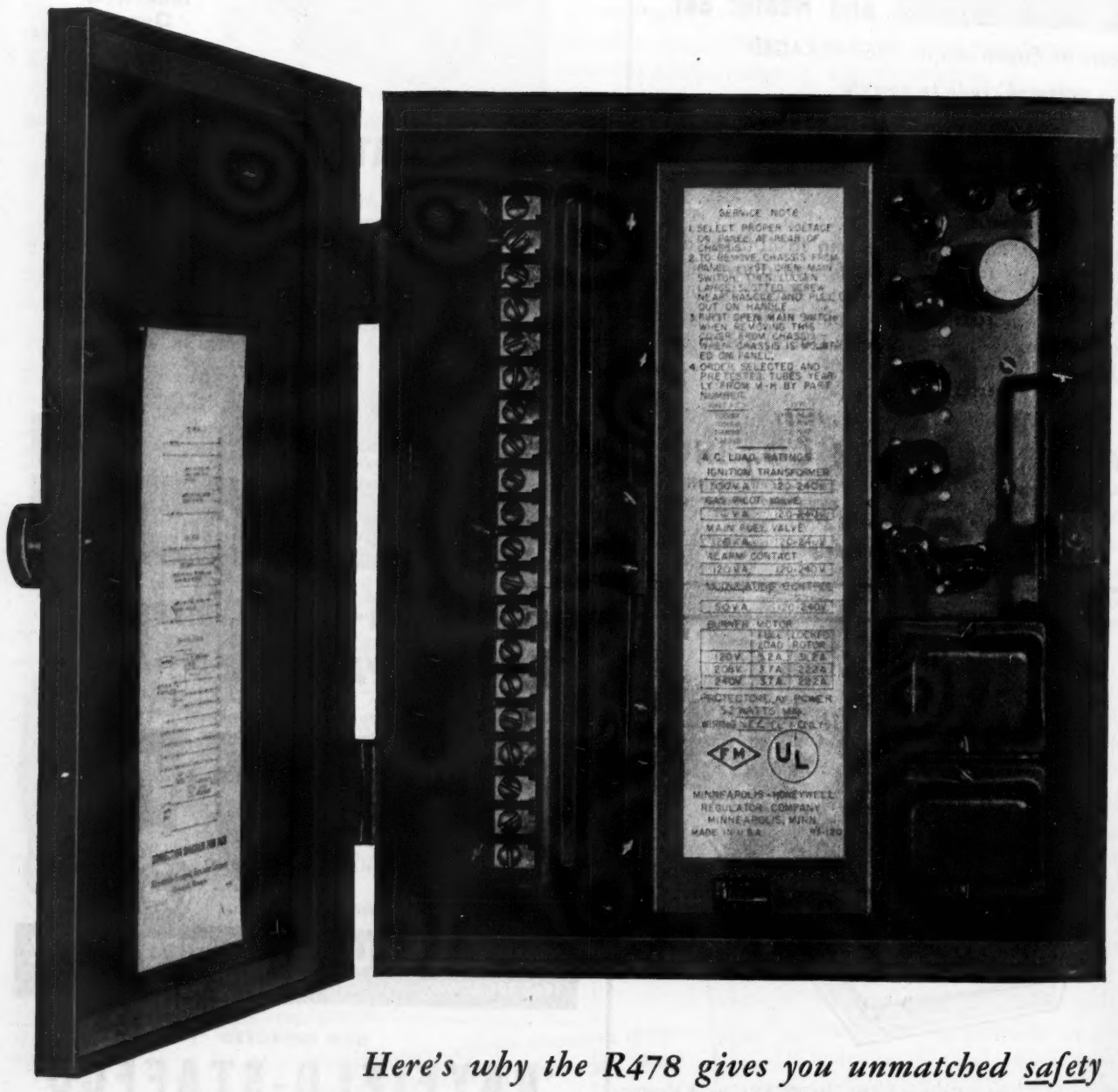
REDUCE HEATING COSTS . . . INCREASE YOUR PROFITS

Burn No. 5 heavy fuel oil. Self-contained, all electric. Self-lubricating. Many new exclusive features. From a bungalow to a skyscraper . . . there's a dependable Rayfield-Staffco Oil Burner to handle your heating job. Write for full details.

RAYFIELD-STAFFCO BURNER CO.

2066 CANALPORT AVENUE CHICAGO 8, ILLINOIS

NEW from Honeywell —*for commercial oil,*



Here's why the R478 gives you unmatched safety

THE NEW R478 Protectorelay* assures you a safe start, component check after each power failure, regardless of length or cause of interruption. Every time power returns, the electronic network must prove itself to be in proper operating sequence before the Protectorelay is allowed to continue normal operation. In addition, the safe start component check circuit still provides component check on each burner operation. The R478 responds instantly to flame failure, providing immediate burner shutdown and post purge.

Shown in the photograph above is the R478B, for lead sulphide applications. The R478A, for rectification circuits, is similar in appearance.

*Trademark

oil, *gas and combination gas-oil burners*

UNMATCHED FLEXIBILITY AND PERFORMANCE IN A FLAME SAFEGUARD!

New R478 Protectorelay lets you give your customers exactly what they want—

- ***Choice of flame detection***—R478A for flame rectification (flame sensing rod and photo cell). R478B for Flameguard (lead sulphide cell).
- ***Choice of burner sequencing***—choose from:
  - Pre-purge period either 5 or 30 seconds.
  - Proved or unproved pilot or direct ignition.
  - Intermittent or interrupted pilot.
  - Ignition timing either 15 or 60 seconds.
  - Low fire start with return to firing rate control either when main fuel valve opens or at end of ignition period.

  In combination gas-oil burners one sequence can be selected for gas firing, another for oil firing.
- ***Choice of manual or automatic starting.***
- ***Wide selection of voltage***—120, 208 or 240-volt 60 cycle applications. Separate model available for 50 cycle.
- ***Broad range of applications***—precision engineered for large conversion burners—such as horizontal rotary, mechanical, air or steam atomizing and forced draft gas—also for steam generators and floor standing heaters.
- ***Fast, dependable electronic detection and timing***—R478 responds *instantly* to flame failure. Then, vacuum-tube rectifiers assure uniform electronic timing of sequences.
- ***Easy to install.***
- ***Lower maintenance costs***—Time-proven Honeywell components—unaffected by friction, dust or corrosion—assure constant efficient operation.

Honeywell manufactures a complete line of heating controls for all types of oil and gas burners. For information on the R478 or on any of our other controls, call your local Honeywell office. Or, write Dept. FH-9-145 Minneapolis 8, Minnesota.

MINNEAPOLIS **Honeywell**

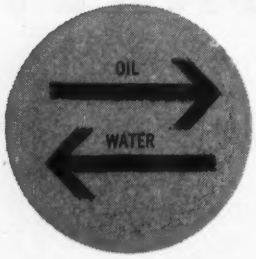
112 offices across the nation

First in Controls

NEW

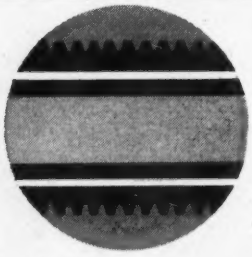
The first safety barrier
FUEL OIL HEATER
that really delivers
hot oil!

Paracoil
THERMO-FILM*

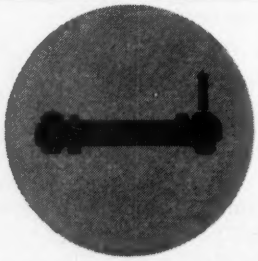


100% true counter-flow — Straight tube construction delivers full rated capacity at high oil exit temperatures.

Safety-barrier — Heat transfer liquid between tubes eliminates all need for electric warning systems.



Extended tube surface — Greatly increases heat transfer capacity.



No electric wiring—Smaller, lighter, more compact than conventional type heaters.

LOWER FIRST COST – LOWER INSTALLED COST!
More capacity per dollar. The combination of straight tube design, extended tube surface, and special built-in features, gives you greater GPH in the Paracoil Thermo-film Heater in a given temperature range than any other comparable fuel oil heater. And its small size, lightweight and simplicity reduce installation costs too. Only five sizes required to cover all normal capacities.

Write today for Bulletin 60

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Cal. No. 321-55SA.

Davis Makes it! BETTER

DAVIS ENGINEERING CORPORATION
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1064 East Grand Street • Elizabeth 4, New Jersey

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COMMERCIAL & INDUSTRIAL oilburning

lines, filters, heaters and burners. The others take place in the flame and on furnace walls. Suitable additives must be designed to act in one or both of these areas to solve users' problems.

The following properties of a good additive for preburner performance have been enumerated by several authors who are in agreement:

1. Simple and safe to use; non-explosive, non-toxic, non-corrosive, non-evaporating, no objectionable odor.
2. Complete solubility in fueloil.
3. Have surface activity with dispersant, detergent and emulsifying action.
4. Must not lose its effectiveness in the presence of water.

Some claim an additive should have a specific gravity equal to or greater than water so it would drop to the bottom of the tank and act on the sludge. Our experience indicates this is unnecessary as the best results of application of additive on a tough problem of tank bottom sludge is on a pumped down tank, with agitation. It is common to apply treatment when a tank is refilled, for good mixing. Subsequent dilution with additional fuel disperses the sludge in a burnable condition.

Our experience also indicates that dispersant power is more necessary in an additive than solvent power.

Antioxidant and antipolymerant action of additive ingredients will stabilize fuel and prevent new sludge formation in storage or when heated.

Good additives prevent soot and smoke in two ways. First, by stabilizing and dispersant action, it will keep the burner clean causing good atomization and clean combustion, with proper air mixture. Second, it will contain a specific combustion catalyst to lower ignition temperature of soot and promote clean burning.

Additives have been developed to handle slag (inorganic) deposits in the furnace due to ash and sulfur in the fuel. These additives are usually dry powder (not oil soluble) fed as a con-

centrated oil emulsified slurry, by pump, directly to the oil being supplied to the burner. It has not been possible to economically produce this type of additive in a desirable concentrated liquid, oil soluble form.

Dosages of additives vary from one pint to one gallon per thousand gallons of fuel. Costs range from 50 cents to $2.50 per thousand gallons treated, or from two to ten cents per barrel. It costs less to cure pre-burner sludge problems.

Case History No. 1

The product development director of a major oil company distributed a report to his division offices, from which the following is taken:

"A 59,000 bbl. tank in No. 6 fueloil service was treated with 110 gallons of additive applied directly to the sludge in the pump down tank just prior to filling. From the first treatment, the viscosity of the bottom sludge (6" thick) was lowered appreciably, and after three treatments it was reduced to a pumpable material which could be mixed with incoming No. 6 fueloil without throwing it off specification. A large quantity of water and some sediment was broken out of the original sludge layer as a result of the treatment and this was disposed of without difficulty . . .

"The tank was never out of service and the combustible portion of the sludge was converted to salable fueloil instead of being wasted . . .

"Conventional methods take the tank out of service for two weeks or more . . .

"This report shows that the use of chemical additive successfully removed the sludge in a relatively short time, at moderate cost, and converted a large portion of it to marketable fueloil, instead of creating a disposal problem for the heavy material."

Case History No. 2

A large user of residual oil in Florida has a 34,917 bbl. tank, 112 ft. in diameter. Sludge depth at start of test 33" average. Tank was partially pumped down before treatment.

Each new barge dump into tank contained 3,500 bbl.

Additive (1 pint per 1,000 gal. oil)

Greater Satisfaction for Your Customers at Lower Cost to You

Equip any size or type commercial or industrial boiler with a Preferred Horizontal Rotary Heavy-Oil Burner and you'll make it a more economical, more dependable automatic heating system.

Preferred Burners are a "hit" in thousands of installations throughout the world. They are completely "packaged" to make installation, wiring and piping simple, easy, quick, economical. And—their efficient operation spells real fuel and maintenance economy.

PREFERRED FEATURES

1—More accurate oil feed to atomizer and air-oil control.
2—Improved automatic starting even after long shut-downs.
3—Sure-fire, clean ignition and combustion.
4—Exclusive "Voluvalve" and equalizing valve to provide controlled, metered delivery of oil to the burner.
5—Availability to Preferred distributors of Preferred automatic heating accessories, such as Draft-A-Justor, pump and heater sets, fuel oil preheaters, feed water return systems, and other combustion supply and control accessories.

These and many other built-in advantages make Preferred Burners outstanding for conversions or for new installations. Sizes from 7½ to 175 GHP for #5 and #6 oil; also made in combination gas and oil types.

A number of worthwhile sales areas are available to distributors interested in a line of heating equipment that's truly rigged to get better results. Write at once.

PREFERRED UTILITIES MFG. CORP.
1860 BROADWAY NEW YORK 23, N. Y.

DISTRIBUTORS WANTED

FOR THIS UNIQUE GAS/OIL BURNER

UL LISTED

GAS syncro flame OIL

DUAL FUEL BURNER MAKES GREAT SAVINGS IN MANY SITUATIONS

● If your territory includes places where cheaper off-peak gas is available, you should have this burner in your line to take advantage of special selling possibilities. Low prices on off-peak gas offer much lower heating costs *if the right kind of a burner can be obtained.* SYNCRO/FLAME *is* that burner!

GOOD PRICE . . . GOOD PROFIT

● Since this is not a universal-type burner, and since it must have certain special features, it naturally carries a higher price — and consequently a better profit for you. A number of unique and outstanding features make it a readily saleable item with high performance capacity. *Many valuable territories are still open* for aggressive and experienced distributors.

LITERATURE ON REQUEST

In order to learn more about the features and specifications of SYNCRO/FLAME Dual Fuel Burners, we suggest you write immediately for our selection of Catalog Data Sheets.

MANUFACTURERS OF OIL AND GAS AND OIL/GAS BURNERS

SYNCHRONOUS FLAME, INC.

WALWORTH • WISCONSIN

COMMERCIAL & INDUSTRIAL oilburning

fed in with new oil as pumped in.

After using 3 drums of additive average depth of sludge 19 inches.

42.4% of sludge had been reclaimed = 2,045 bbl. oil at $2.28 = $4,662.60.

Cost of 3 drums of additive $404.25.

Actual cash saving $4,258.35.

Case History No. 3

Plant in Chicago area. Burning poor grade No. 6 oil high in B S & W. Before treatment—

Fueloil strainers cleaned twice daily of necessity. 1/8" sediment in strainers at each cleaning.

Burners badly fouled by carbon deposits. Treatment—

1 quart additive per 1,000 gallons fueloil. Results—

Immediate improvement.

Strainers cleaned every third day.

Strainers now wash clean without scrapping which was previously necessary.

Case History No. 4

Soot elimination with combustion catalyst additive.

Two boilers went into service in November and December 1953.

No fueloil treatment used.

Serious soot deposits discovered in April 1954 during boiler outage. Boiler cleaning impossible because of station loads.

Treatment of fueloil with combustion catalyst started.

End of 1953-54 heating season boilers overhauled. Heavy soot deposits found in April burned off leaving clean tubes. Use of additive continued.

Additive continued through 1954-55 heating season.

Boiler No. 3 placed in service November 1954.

Annual overhaul Summer 1955 showed all boilers exceptionally clean.

These reports indicate that field use of treatments can be successful when they are carefully designed and evaluated in laboratory testing and applied correctly on the type of problem for which they were designed.

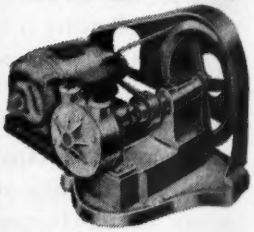
PUMPS and SEPARATORS for oil burner service

CLASS 60 LIGHT OIL PUMPS

Direct Drive for #1 to #5 oils inclusive
Ask for bulletin A-1330

CLASS 60 HEAVY OIL PUMPS

Reduction Drive for heavy oil
Ask for Bulletin No. A-1193



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Single and Duplex
Standard and High Pressure Baskets instantly and easily changed — eliminates filter replacement costs entirely.
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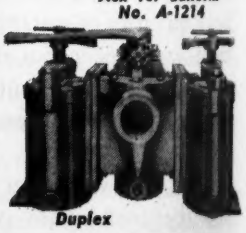

Duplex

for bulk station service

CLASS 80 MOTORED PUMPS

Direct Drive
For exclusive use with Light oils and Solvents
Ask for Bulletin No. A-1267

Interchangeable Service
Both light and heavy oils—tank truck and bulk station
Ask for Bulletin No. A-1366

KRAISSL KRAISSL CO

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New Trend in Specifications!

...FITZGIBBONS *Packaged* BOILER UNIT

SINGLE RESPONSIBILITY
A factory integrated and completely wired unit with all equipment *coordinated* into a heating package that meets *design performance*. Fire tested before shipment with performance backed by Fitzgibbons.

REALISTIC RATINGS
Rated on the basis of 8.2 sq. ft. heating surface per boiler horsepower with guaranteed gross output based on 5.0 sq. ft. of heating surface per boiler hp.

CERTIFIED EFFICIENCY
Factory tests assure high operating efficiencies.

LOW COST MAINTENANCE
Full wet back construction of rear furnace walls (top, back and sides) eliminates rear refractory and recurring costs for maintenance and replacement.

FULLY AUTOMATIC
Latest and best control equipment for safe, sure operation with oil, gas or both.

CLEANER OPERATION
High quality induced draft fan assembly provides correct draft at all times and results in cleaner, quieter operation.

Engineered by the makers of . . .

The Fitzgibbons Boiler®

SINCE 1856 MOST ECONOMICAL IN USE THE FITZGIBBONS BOILER 1956

Catalog AR-12 gives complete details. Address Fitzgibbons Boiler Company Inc., 101 Park Avenue, N. Y. 17, N. Y.

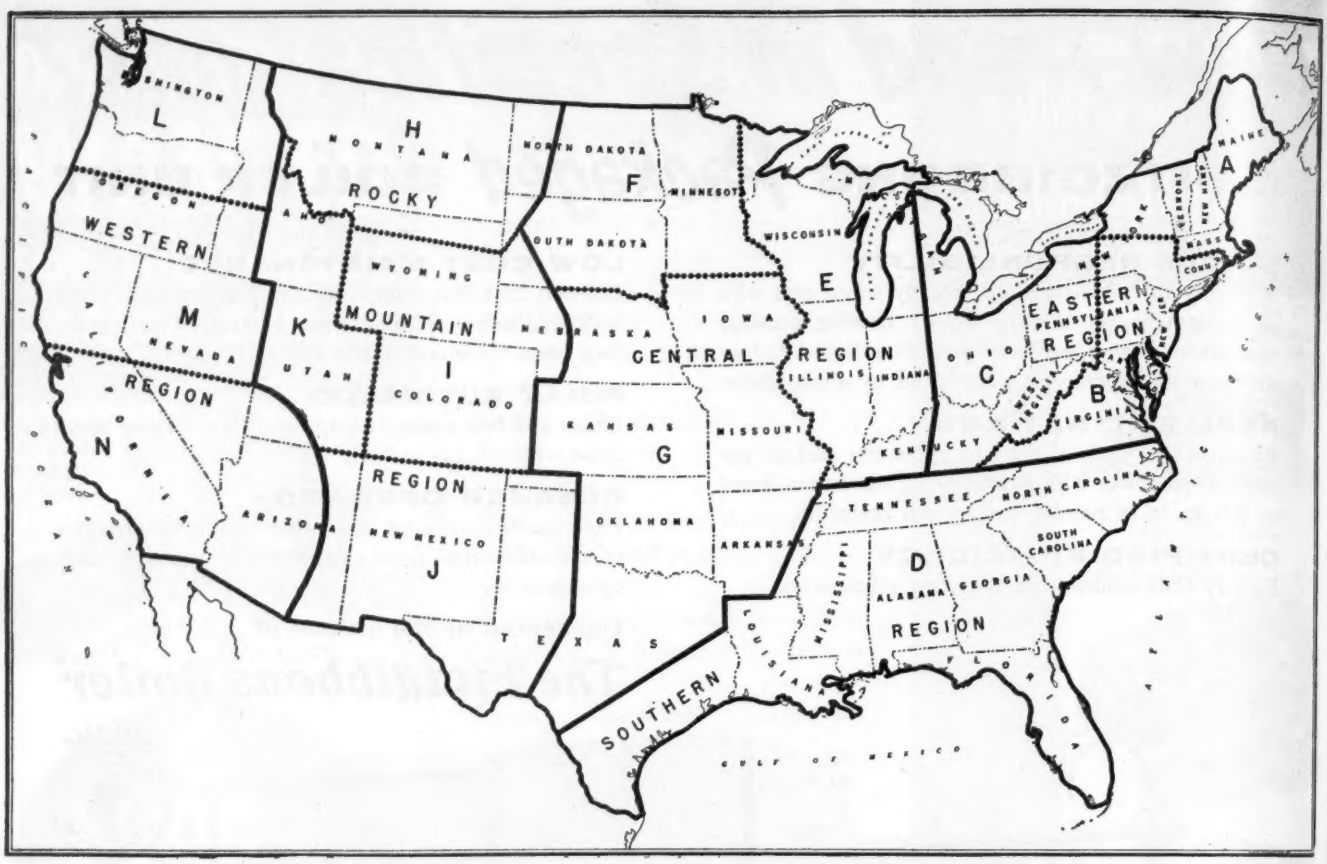

Figure 1.—*Geographical areas of the National Survey of Burner-Fuel Oils, 1956*

Second Survey of Burner-Fueloils published by Bureau of Mines

THE TABLES and map reproduced on these pages appear in Information Circular 7762, published by The Bureau of Mines, U. S. Dept. of Interior, entitled "National Survey of Burner Fueloils, 1956."

This survey was conducted at the request of the Oil-Heat Institute of America, Inc., and the petroleum industry, under a co-operative agreement between the Bureau of Mines and the American Petroleum Institute and is the second such survey reported.

The tables represent data on 427 samples of burner-fueloil, typical of their manufacture during the early part of 1956, submitted by 45 petroleum refining companies. They give the analyses in detail in five general groups according to the grade of burner-fueloil. Each group is subdivided into five tabulations according to the geographic marketing distribution of the fuels. The five general regions are indicated on the map with the 14 districts comprising these regions indicated by capital letters.

Copies of the report may be secured from the Bureau of Mines, Washington, or OHI, New York.

Summary of Grade 2 Fuels, Burner-fueloil Survey, 1956

Geographic distribution of burner fuel oils[1]		Eastern region			Southern region			Central region			Rocky Mountain region			Western region		
Districts within region		A, B, C			D			E, F, G			H, I, J, K			L, M, N		
Additional districts[2]		D, E, G			A, B, C, E, F, G			A, B, C, D, H, I, J			F, G, L, M, N			H, I, K		
Number of fuels		56			17			45			20			26		
Test	ASTM	Minimum	Average	Maximum	Minimum	Average	Maximum	Minimum	Average	Maximum	Minimum	Average	Maximum	Minimum	Average	Maximum
Gravity ..... ° API	D287	27.4	34.9	44.3	30.7	34.3	47.2	27.4	34.6	40.1	24.1	35.5	41.6	24.1	34.1	41.6
Flash point, Pensky-Martens closed tester ..... ° F.	D93	134	—	222	140	—	222	128	—	222	135	—	215	130	—	230
Viscosity																
Kinematic at 100° F. .....centistokes	D445	2.1	2.68	3.5	2.1	2.54	3.25	1.7	2.55	3.33	1.77	2.56	3.44	1.50	2.90	4.69
Cloud test ..... ° F.	D97	—12	—	30	—35	—	14	—14	—	16	—35	—	10	—50	—	20
Pour point ..... ° F.	D97	—30	—	20	—45	—	0	—20	—	0	—40	—	5	*—40	—	25
Sulfur content .....wt. percent	D129	0.052	0.330	1.02	0.05	0.326	0.64	0.066	0.339	0.931	0.06	0.496	1.4	0.14	0.513	1.4
Aniline point ..... ° F.	D611	100.0	142.6	176	120	137.8	168	111.2	137.9	162	69	138.1	158	69	136.3	158.7
Ramsbottom carbon residue on 10 percent residue .....percent	D524	0.01	0.137	0.30	0.06	0.158	0.29	0.05	0.140	0.23	0.003	0.093	0.17	0.06	0.112	0.25
Corrosion, 3 hours at 122° F.	D130	1A	—	3	1	—	3	1A	—	1	1A	—	1	1A	—	2
Ash .....percent	D482	0.000	0.000	0.003	0.00	0.000	0.002	0.000	0.000	0.002	0.000	0.000	Trace	0.00	0.000	*0.01
Water and sediment .....vol. percent	D96	0.00	0.00	*0.1	0.00	0.00	*0.1	0.000	0.00	*0.1	0.00	0.00	*0.1	0.00	0.00	*0.1
Distillation test, on volume recovered basis:	D158															
Initial boiling point ..... ° F.		316	364	450	316	355	450	316	365	450	332	379	457	312	375	457
10 percent		387	432	487	386	426	480	378	430	483	379	435	474	370	436	494
50 percent		459	505	543	431	499	522	470	504	543	432	491	523	409	499	544
90 percent		552	585	635	457	579	610	549	579	610	485	563	624	460	578	638
End point		600	636	675	530	632	663	596	627	674	533	614	677	491	632	714

[1]Regions and districts are shown on map.

[2]Some of the fuels are sold in districts of more than one region.

*Is less than.

Summary of Grade 1 Fuels, Burner-fueloil Survey, 1956

Geographic distribution of burner fuel oils[1]		Eastern region			Southern region			Central region			Rocky Mountain region			Western region		
Districts within region		A, B, C, D, E, G			D			E, F, G			H, I, J, K			L, M, N, H, I		
Additional districts[2]					A, B, C, E, F, G			A, B, C, D, H, I, J			E, F, G, L, M, N					
Number of fuels		41			13			46			26			26		
Test	ASTM	Minimum	Average	Maximum	Minimum	Average	Maximum	Minimum	Average	Maximum	Minimum	Average	Maximum	Minimum	Average	Maximum
Gravity, ° API	D287	36.3	42.3	44.6	36.3	42.1	44.5	36.3	42.3	44.6	38.6	41.9	44.9	34.8	39.3	44.5
Flash point, Tag closed tester, ° F.	D56	123	—	158	126	—	141	123	—	158	126	—	1.58	120	—	185
Viscosity																
Kinematic at 100° F., centistokes	D445	1.57	1.82	2.43	1.52	1.78	2.43	1.57	1.82	2.43	1.38	1.77	2.35	1.50	1.87	2.22
Cloud test, ° F.	D97	—50	—	—10	—54	—	—15	—50	—	—10	—60	—	—15	—60	—	—20
Pour point, ° F.	D97	—60	—	*—10	—60	—	*—15	—60	—	—10	—55	—	—20	—65	—	0
Sulfur content, wt. percent	D129	0.015	0.117	0.574	0.015	0.087	0.30	0.011	0.117	0.574	0.011	0.20	0.96	0.01	0.236	0.96
Aniline point, ° F.	D611	140	151.3	161.2	140	148.0	154	140	151.3	161.2	137	146.6	157	121.0	141.6	159.4
Ramsbottom carbon residue on 10 percent residue, percent	D524	0.0	0.064	0.15	0.01	0.054	0.09	0.0	0.064	0.15	0.00	0.057	0.104	0.02	0.067	0.13
Corrosion, 3 hours at 122° F.	D130	1A	—	1	*1A	—	3	1A	—	1	1A	—	1	1A	—	2
Ash, percent	D482	0.000	0.000	0.0	0.000	0.000	0.0	0.000	0.000	0.04	0.000	0.000	0.04	0.000	0.000	*0.01
Water and sediment, vol. percent	D96															
Distillation test, on volume recovered basis:	D86	.000	.000	*0.1	0.00	0.00	*0.1	.000	.000	*0.1	0.00	0.00	*0.1	0.00	0.00	*0.1
initial boiling point, ° F.		320	354	382	320	346	370	320	354	382	326	353	382	312	347	380
10 percent		360	388	428	362	382	428	360	388	428	362	389	422	362	391	420
50 percent		414	439	486	413	433	486	414	439	486	393	434	481	395	440	471
90 percent		453	507	554	466	498	554	453	507	554	440	499	552	440	505	543
End point		496	547	602	504	536	602	496	547	602	474	546	620	474	551	620

Summary of Grade 4 Fuels, Burner-fueloil Survey, 1956

Geographic distribution of burner fuel oils[1]		Eastern region			Southern region		Central region			Rocky Mountain region			Western region		
Districts within region		A, B, C, D, E			D		E, F, G			H, I, J, K, L			L, M, N, H, I, J, K		
Additional districts[2]					B, I		C								
Number of fuels		25					8			2			1		
Test	ASTM	Minimum	Average	Maximum	(Data on 1 sample)		Minimum	Average	Maximum	Minimum	Average	Maximum	(Data on 1 sample)		
Gravity, ° API	D287	8.7	21.2	33.2	21.7		8.7	22.4	36.3	23.7	(4)	30.0	30.0		
Flash point, Pensky-Martens closed tester, ° F.	D93	152	—	†230	216		156	—	225	200	—	200	200		
Viscosity															
Kinematic at 100° F., centistokes	D445	4.49	14.17	25.4	10.2		2.38	13.97	23.6	4.4	—	[5](15)	4.4		
Cloud test, ° F.	D97	65	—	—	—		—	—	—	—	[3]10	—	10		
Pour point, ° F.	D97	—	—	20	0		—30	—	25	—20	—	0	0		
Sulfur content, wt. percent	D129	0.23	0.759	2.10	0.9		0.328	0.946	1.62	1.48	—	2.2	2.2		
Aniline point, ° F.	D611	—	[3]116.2	—	—		—	—	—	—	[3]142	—	142		
Ramsbottom carbon residue on 100 per cent sample, percent	D524	—	[3]1A	7.35	0.4		0.111	4.13	6.5	0.07	—	2.46	0.07		
Corrosion, 3 hours at 122° F.	D130	0.000	0.014	0.05	—		—	—	—	—	[3]1	—	1		
Ash, percent	D482	0.19	3.06	7.35	0.001		0.00	0.025	0.082	0.00	—	0.002	0.00		
Water and sediment, vol. percent	D96	0.0	0.14	0.4	Trace		0.00	0.08	0.1	0.0	—	0.1	0.0		
Distillation test, on volume recovered basis:	D158														
initial boiling point, ° F.		375	(4)	448	448		—	[3]388	—	—	[3]528	—	528		
10 percent		463	—	620	620		—	438	—	—	557	—	557		
50 percent		535	—	674	674		—	522	—	—	558	—	588		
90 percent		716	—	730	716		—	598	—	—	635	—	635		
End point		†760	—	840	†760		—	655	—	—	686	—	686		

Summary of Grade 5 Fuels, Burner-fueloil Survey, 1956

Geographic distribution of burner fuel oils[1]		Eastern region			Southern region			Central region			Rocky Mountain region			Western region		
Districts within region		A, B, C, D, E, G			D			E, F, G			H, I, J, K			L, M, N, H, I, K		
Additional districts[2]					A, B, C, G			C, D			—					
Number of fuels		19			4			17			8			12		
Test	ASTM	Minimum	Average	Maximum	Minimum	Average	Maximum	Minimum	Average	Maximum	Minimum	Average	Maximum	Minimum	Average	Maximum
Gravity, ° API	D287	8.4	16.4	23.6	14.6	16.6	18.6	5.5	14.7	24.8	0.0	12.3	21.4	10.5	14.2	20.5
Flash point, Pensky-Martens closed tester, ° F.	D93	136	—	270	165	—	220	156	—	255	165	—	300	165	—	300
Viscosity																
Kinematic at 100° F., centistokes	D445	25.5	75.1	135.7	42	71.6	133	15.15	78.8	133	13.5	97.3	179.1	13.5	(4)	167
Furol at 122°F., seconds	D88	11	25.6	39.8	18	25.2	36	11	23.3	36	12	26.6	39	12	28.5	38
Pour point, ° F.	D97	—30	—	40	*—20	—	40	—25	—	45	—5	—	50	—25	—	50
Sulfur content, wt. percent	D129	0.42	1.08	2.4	0.59	1.57	2.68	0.54	1.38	3.52	0.65	2.33	4.7	0.65	1.50	4.7
Ramsbottom carbon residue on 100 per cent sample, percent	D524	2.9	5.64	9.1	2.9	6.02	7.95	3.9	6.66	11.2	1.75	6.71	14.4	1.75	8.05	14.3
Ash, percent	D482	0.0	0.039	0.09	0.022	0.046	0.06	0.00	0.044	0.12	0.003	0.021	0.08	Trace	0.03	0.06
Water and sediment, vol. percent	D96	Trace	0.18	0.4	0.10	0.18	0.20	0.03	0.21	0.7	0.0	0.20	0.8	Trace	0.2	0.8

Summary of Grade 6 Fuels, Burner-fueloil Survey, 1956

Geographic distribution of burner fuel oils[1]		Eastern region			Southern region			Central region			Rocky Mountain region			Western region		
Districts within region		A, B, C, D, E			D			E, F, G			H, I, J, K			L, M, N		
Additional districts[2]					A, B, C, E, G, J			C, D, H, I, J			D, E, F, G, L			E, F, H, I, K		
Number of fuels		46			14			32			23			23		
Test	ASTM	Minimum	Average	Maximum	Minimum	Average	Maximum	Minimum	Average	Maximum	Minimum	Average	Maximum	Minimum	Average	Maximum
Gravity, ° API	D287	5.8	12.9	18.8	5.2	11.5	18.8	—3.3	9.7	17.7	0.0	9.2	21.4	4.9	9.7	16.8
Flash point, Pensky-Martens closed tester, ° F.	D93	140	—	285	†160	—	310	156	—	345	150	—	420	178	—	420
Viscosity																
Furol at 122°F., seconds	D88	28.2	148.5	258	36.5	155.2	278	28.2	190.7	291.5	36.5	148.1	285	45	147.0	245
Pour point, ° F.	D97	0	—	60	0	—	60	5	—	60	20	—	65	15	—	60
Sulfur content, wt. percent	D129	0.29	1.47	3.88	0.58	1.50	2.85	0.55	1.37	3.7	0.55	1.92	5.25	0.70	1.70	5.25
Ramsbottom carbon residue on 100 per cent sample, percent	D524	1.67	9.36	15.7	4.9	10.49	15.0	1.67	10.72	20.6	4.39	10.64	22.7	5.8	13.76	18.2
Ash, percent	D482	0.0	0.053	0.28	0.005	0.045	0.09	0.008	0.068	0.5	Trace	0.031	0.2	Trace	0.05	0.08
Water and sediment, vol. percent	D96	0.05	0.27	1.5	0.05	0.28	1.0	*0.1	0.18	1.0	0.0	0.36	1.6	*0.1	0.2	0.8

[1]Regions and districts are shown on map. [2]Some of the fuels are sold in districts of more than one region. [3]Result of test on one sample only. [4]No average was determined as an insufficient number of samples was represented. *Is less than. †Is more than.

297 *fueloil & oil heat* Advertise ill their Sales Stor H

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"... We received a number of inquiries on the first full page two color advertisement you ran on page 93 in the March issue, but what was most gratifying is that we signed one inquirer up for $10,000.00 worth of equipment and we appointed them our distributor in a territory we have had very poor success with formerly."

—Frank M. Wymbs, 6/20/56
Hev-e-Oil Burner Distributors
4750 Third Avenue, N. Y. 58, N. Y.

Range Oil Sales by Grades and States

(Thousands of 42-gallon barrels)

NEW ENGLAND STATES

	Kerosene	No. 1 Fuel	Total 1955	Total 1954
Mass.	10,838	718	11,556	11,610
Conn.	4,583	266	4,849	4,857
R. I.	2,498	103	2,601	2,531
Maine	3,113	228	3,341	3,174
N. H.	1,362	95	1,457	1,432
Vt.	559	47	606	611
	22,953	1,457	24,410	24,215

MIDDLE ATLANTIC STATES

	Kerosene	No. 1 Fuel	Total 1955	Total 1954
N. Y.	7,914	594	8,508	8,466
N. J.	3,769	296	4,065	4,071
Penna.	2,248	394	2,642	2,533
Md.	1,581	58	1,639	1,549
Dela.	622	15	637	494
D. of C.	172	..	172	198
	16,306	1,357	17,663	17,311

MIDWESTERN STATES

	Kerosene	No. 1 Fuel	Total 1955	Total 1954
Illinois	3,239	2,910	6,149	6,241
Mich.	3,608	2,640	6,248	6,217
Wisc.	1,688	1,632	3,320	3,126
Ind.	2,320	1,010	3,330	3,225
Minn.	1,665	1,033	2,698	2,630
Mo.	1,644	818	2,462	2,406
Iowa	1,694	1,060	2,754	2,278
Ohio	1,523	643	2,166	2,209
Nebr.	736	180	916	938
S. Dak.	483	148	631	729
Kans.	668	160	828	893
N. D.	608	134	742	716
	19,876	12,368	32,244	31,608

WESTERN STATES

	Kerosene	No. 1 Fuel	Total 1955	Total 1954
Colo.	197	109	306	319
Mont.	148	123	271	292
N. Mex.	163	15	178	193
Calif.	90	..	90	83
Idaho	21	88	109	88
Wyo.	70	22	92	87
Utah	26	88	114	44
Ore.	5	..	5	7
Wash.	4	..	4	12
Ariz.	2	..	2	8
Nev.	..	..	..	2
	726	445	1,171	1,135

SOUTHERN STATES

	Kerosene	No. 1 Fuel	Total 1955	Total 1954
N. C.	7,918	262	8,180	8,179
Texas	1,594	347	1,941	1,963
S. C.	3,289	111	3,400	3,334
Ga.	1,836	95	1,931	1,981
Va.	2,393	91	2,484	2,409
Fla.	1,803	78	1,881	1,900
Tenn.	1,581	69	1,650	1,732
Ark.	606	68	674	830
Okla.	657	96	753	763
La.	571	77	648	675
Ala.	892	41	933	934
Ky.	681	399	1,080	1,078
Miss.	452	13	465	530
W. Va.	197	..	197	224
	24,470	1,747	26,217	26,532

TOTAL UNITED STATES

	Kerosene	No. 1 Fuel	Total 1955	Total 1954
Total	84,331	17,374	101,705	100,801

Heating oil Sales show Gains in 1955 Bureau of Mines Report

NEW RECORDS were reached in sales of distillate fueloils, as tabulated in Mineral Market Report No. MMS 2517 released by the Bureau of Mines, United States Department of Interior.

This continues the upward trend started in 1950 and was reflected further in gains shown in residual grades, compared with a loss in 1954. However, kerosene reversed the trend with a small decline in 1955 sales, contrasted to a slightly higher mark in year before.

Deliveries of distillate fueloils were higher by 11% in 1955 against an 8% increase reported in 1954; deliveries of residual grades, which declined by 8% in 1954, showed a gain of 7% in 1955. Kerosene sales were lower by 2% in 1955, compared with a 3% expansion in 1954.

Exports of distillate fueloils in 1955 remained at the 1954 level; total residual exports in 1955 were a quarter above 1954 quantities. Kerosene shipments abroad were lower by about a third in 1955.

Sales of distillate fueloils for all principal uses showed important gains in 1955, except those to gas and electric power plants. In 1955, as in 1954, the expanded market for heating oils due to still colder weather, and the greater use of diesel fuel by railroads and by heavy on and off road equipment, were the main factors contributing to the increase.

Sales of heating oils, both distillate and residual grades, increased in 1955 to a total of 425,996,000 barrels, up 11.1% from the 383,385,000 barrels reported sold during 1954. The increase was caused both by the colder weather experienced and also because of an 8% increase in the number of domestic oilburners in operation. Distillate heating oils accounted for 339,714,000 barrels of the 1955 total, an increase of 11.5% over light heating oils sold in 1954. Residual oils used for heating sold in 1955 totaled 86,282,000 barrels, up 9.4% from 1954 sales.

While total sales of kerosene in 1955 decreased 2% during 1955, range oil sold as kerosene was down only slightly, 84,331,000 barrels in 1955 and 85,224,000 barrels the preceding year; range oil sold as No. 1 oil on the other hand increased by about 12% to 17,374,000 barrels. The report explains that some participating companies do not keep separate records for these two similar fuels and this may account for these different percentage changes.

A. T. Coumbe and I. F. Avery prepared the report.

Fueloil Sales 1951-1955 by Uses

(In millions of 42-gallon barrels)

DISTILLATE 1951	1952	1953	1954	1955		RESIDUAL 1951	1952	1953	1954	1955
250	263	267	304	340	Heating	76	79	82	79	86
16	16	16	15	17	No. 1 sold as range	..	..	..	..	..
60	68	75	77	85	Railroads	55	41	29	16	15
14	17	17	16	17	Vessels	107	110	114	109	115
10	8	7	6	6	Utilities	71	71	85	71	76
43	43	42	42	44	Industrial	157	158	167	160	173
8	8	8	8	8	Oil Company Fuel	54	54	51	52	53
8	10	10	9	11	Armed Forces	38	37	31	27	28
40	46	47	49	54	All other uses	5	6	6	7	10
449	479	489	526	582	Total United States	563	556	565	521	556
23	34	32	24	24	Exports	29	28	26	27	33
472	513	521	550	606	Grand Total	592	584	591	548	589

Heating Oil Sales by Grades and States
U. S. Bureau of Mines

(Thousands of 42-gallon barrels)

				Total Distillate		Districts			Total Residual		Grand Total	
						1						
No. 1	No. 2	No. 3	No. 4	1955	1954	NEW ENGLAND	No. 5	No. 6	1955	1954	1955	1954
1,403	28,442	168	44	30,057	27,526	Massachusetts	2,093	6,592	8,685	8,148	38,742	35,674
1,157	11,407	63	751	13,378	12,380	Connecticut	1,504	2,801	4,305	4,118	17,683	16,498
160	3,945	9	1	4,115	3,918	Rhode Island	361	2,225	2,586	2,551	6,701	6,469
337	4,069	10	..	4,416	4,191	Maine	56	431	487	460	4,903	4,651
120	3,972	..	..	4,092	3,857	New Hampshire	72	135	207	197	4,299	4,054
130	1,229	14	2	1,375	1,098	Vermont	17	127	144	138	1,519	1,236
3,307	53,064	264	798	57,433	52,970		4,103	12,311	16,414	15,612	73,847	68,582
						2						
No. 1	No. 2	No. 3	No. 4	1955	1954	MID-ATLANTIC	No. 5	No. 6	1955	1954	1955	1954
3,712	47,629	447	2,547	54,335	48,610	New York	2,649	14,619	17,268	15,481	71,603	64,091
1,348	25,180	212	2,067	28,807	26,249	New Jersey	2,098	4,260	6,358	5,815	35,165	32,064
1,884	25,468	532	220	28,104	25,384	Pennsylvania	1,858	2,635	4,493	4,201	32,597	29,585
566	11,922	11	119	12,618	11,625	Maryland	600	2,081	2,681	2,413	15,299	14,038
347	2,689	14	133	3,183	3,061	Dist. of Columbia	358	1,422	1,780	1,609	4,963	4,670
137	2,113	8	2	2,260	2,063	Delaware	119	232	351	345	2,611	2,408
7,994	115,001	1,224	5,088	129,307	116,992		7,682	25,249	32,931	29,864	162,238	146,856
						3						
No. 1	No. 2	No. 3	No. 4	1955	1954	MIDDLE WESTERN	No. 5	No. 6	1955	1954	1955	1954
3,529	12,571	2,912	52	19,064	16,636	Illinois	3,732	3,731	7,463	7,143	26,527	23,779
4,778	12,315	565	164	17,822	15,456	Michigan	1,093	1,748	2,841	2,757	20,663	18,213
2,255	9,392	508	104	12,259	11,583	Minnesota	792	715	1,507	1,417	13,766	13,000
2,045	8,807	569	47	11,468	9,542	Wisconsin	650	379	1,029	1,001	12,497	10,543
2,957	5,241	184	381	8,763	7,760	Ohio	561	488	1,049	982	9,812	8,742
2,669	5,307	1,067	153	9,196	7,904	Indiana	853	719	1,572	1,522	10,768	9,426
1,990	4,114	223	4	6,331	6,093	Iowa	494	146	640	550	6,971	6,643
1,351	3,522	508	51	5,432	5,042	Missouri	1,701	810	2,511	2,490	7,943	7,532
685	1,882	184	10	2,761	2,577	Nebraska	165	45	210	205	2,971	2,782
298	1,422	31	25	1,776	1,623	North Dakota	25	36	61	43	1,837	1,666
610	1,164	20	1	1,795	1,575	South Dakota	25	50	75	76	1,870	1,651
670	896	35	..	1,601	1,392	Kansas	433	256	689	703	2,290	2,095
23,837	66,633	6,806	992	98,268	87,183		10,524	9,123	19,647	18,889	117,915	106,072
						4						
No. 1	No. 2	No. 3	No. 4	1955	1954	WESTERN	No. 5	No. 6	1955	1954	1955	1954
5,636	..	7,771	..	13,407	11,447	Washington	1,945	1,556	3,501	3,020	16,908	14,467
2,438	..	4,159	..	6,597	5,532	Oregon	1,332	707	2,039	1,745	8,636	7,277
1,603	..	2,902	..	4,505	4,315	California	1,835	2,659	4,494	2,983	8,999	7,298
791	851	274	29	1,945	1,500	Idaho	202	143	345	404	2,290	1,904
210	470	219	30	929	837	Montana	96	88	184	182	1,113	1,019
317	566	167	..	1,050	999	Colorado	97	325	422	391	1,472	1,390
186	..	327	..	513	527	Nevada	66	22	88	103	601	630
272	626	152	54	1,104	1,052	Utah	255	107	362	321	1,466	1,373
68	..	209	..	277	278	Arizona	..	3	3	1	280	279
96	330	50	8	484	467	Wyoming	33	17	50	50	534	517
37	102	14	..	153	116	New Mexico	11	26	37	21	190	137
11,654	2,945	16,244	121	30,964	27,070		5,872	5,653	11,525	9,221	42,489	36,291
						5						
No. 1	No. 2	No. 3	No. 4	1955	1954	SOUTHERN	No. 5	No. 6	1955	1954	1955	1954
1,159	6,643	8	172	7,982	6,557	Virginia	268	882	1,150	916	9,132	7,473
618	4,062	96	..	4,776	3,883	North Carolina	91	108	199	169	4,975	4,052
177	1,150	5	3	1,335	1,533	Texas	814	461	1,275	1,277	2,610	2,810
260	1,937	45	10	2,252	1,863	Florida	132	964	1,096	1,032	3,348	2,895
221	851	68	1	1,141	1,039	Georgia	156	267	423	411	1,564	1,450
165	629	5	..	799	740	Tennessee	30	145	175	166	974	906
260	1,173	21	..	1,454	1,282	South Carolina	91	195	286	163	1,740	1,445
328	827	18	45	1,218	896	Kentucky	35	61	96	96	1,314	992
71	614	6	1	692	617	Alabama	58	59	117	108	809	725
72	521	62	4	659	628	Louisiana	190	381	571	580	1,230	1,208
46	371	1	1	419	362	West Virginia	45	37	82	66	501	428
66	388	13	..	467	421	Oklahoma	76	62	138	126	605	547
41	248	11	..	300	273	Arkansas	43	112	155	147	455	420
39	197	1	11	248	231	Mississippi	1	1	2	2	250	233
3,523	19,611	360	248	23,742	20,325		2,030	3,735	5,765	5,259	29,507	25,584
No. 1	No. 2	No. 3	No. 4	1955	1954	TOTAL UNITED STATES	No. 5	No. 6	1955	1954	1955	1954
50,315	257,254	24,898	7,247	339,714		Total U. S. 1955	30,211	56,071	86,282		425,996	383,385
43,540	233,021	21,973	6,006		304,540	Total U. S. 1954	28,084	50,761		78,845		

Industry Groups

(*Begins on page 42*)

Study on effect of Awnings among other ASHAE projects

A PROJECTED co-operative research program on the effect of the use of awnings in lessening airconditioning requirements and a current study of how airconditioning affects human comfort and performance are among projects of the American Society of Heating and Air-Conditioning Engineers.

The study to determine how much awnings reduce solar heat entering buildings, thereby lessening the required amount of airconditioning capacity and power consumption, which will begin this summer at the Society's research laboratory in Cleveland, will be conducted under the sponsorship of the Society, the Canvas Awning Institute, the National Canvas Goods Manfacturers Association and the National Metal Awning Association.

The current $240,000 research program of the Society includes 22 projects being conducted at the Society's laboratory and 11 co-operating institutions. Subjects of study include hot water heating, fan and air noise, industrial ventilation, infiltration into commercial buildings, panel heating and cooling, prediction of heating and cooling loads, noise in piped liquids and odor control.

Because of the rapid tempo of today's activity in heating, ventilating and airconditioning, contractors and design engineers must have quick and accurate answers to their design and installation problems.

Residential or Commercial
HEAT by HERCO!
You get more satisfaction, finest quality and less service headaches with Herco. Besides, each item is individually fire tested at the factory, and guaranteed!
There is a complete line (at the right prices) for every type and size of job.
OIL THRIFTY
HERCO
HERCO OIL BURNER CORP., LANCASTER, PA.
In the Heating Business since 1927. Write for Catalogs.

Fuel Oil Council of Western Mass. elects Auth president

ELECTED president of the Fuel Oil Council of Western Massachusetts at its annual meeting was Gerald L. Auth of Auth Fuels. Other officers include Reginald K. Swett, vice-president; Mae Davis, secretary; Wilbur J. Hogan, treasurer, and Mrs. Helen Choinard, assistant treasurer. In addition to the officers, the executive committee includes Leo Burgess, James Grimaldi, William H. Flood, James Punderson, Abbott Roberts, Phil Schwartz and Saul Simons.

A major advertising effort is planned for this month by the Council which reduced its schedule during the summer months. During July and August, small ads in the home section of the local newspaper emphasized economy, safety and cleanliness of oilheat.

At the annual meeting, an informal vote recommended changing the name of the organization to Oil Heat Council as a name being more representative of the industry as a whole and better expressing the Council's primary purpose.

The Council held its annual outing at Turner Park in East Longmeadow on August 28. Leo Burgess was chairman of the arrangements committee.

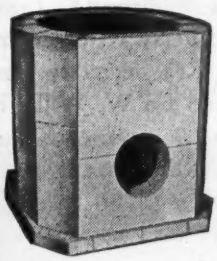
Maryland Oil Heat Association holds its sixth annual Outing

THE SIXTH annual outing of the Oil Heat Association of Maryland was held August 3 at the Hillendale Country Club, near Jacksonville. Features of the affair were golf, softball and swimming, with a banquet as the climax.

INCREASE YOUR SHARE of the MARKET...

Make Money on Every Job with A. P. GREEN COMBUSTION CHAMBERS

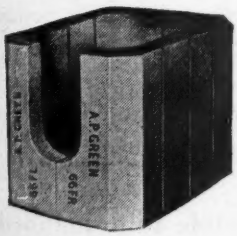
QUICK-EASY TO INSTALL



STANDARD IFB Combustion Chamber

STANDARD IFB Combustion Chamber . . . Requires minimum installation time. Front tile is in two pieces with burner opening already cut. Packed in special container that guards against breakage in shipment. Everything you need is in the carton, including a 5-lb. can of 'SAIRSET high temperature mortar.

ASSURE EFFICIENT OPERATION



STREAMLINED Combustion Chamber

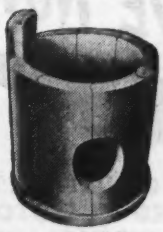
STREAMLINED Combustion Chamber . . . Conforms to the natural shape of the flame and eliminates "dead corners." Provides more quiet operation. The ease of installation makes the installed cost of a STREAMLINED Chamber no more than that of an ordinary type of chamber.

HIGH TEMPERATURE Insulations

HIGH TEMPERATURE Insulations

These A. P. GREEN High Temperature insulations help insure the efficiency of the oil burner installation.

COST NO MORE THAN ORDINARY CHAMBERS



PERFECTO Combustion Chamber

PERFECTO Combustion Chamber . . . A practical, economical solution to many oil conversion problems. Installation is simple. For both round and elongated chambers, four basic tile shapes are used to form chamber sizes to fit nearly every type of domestic furnace or boiler.

SIZES TO MEET EVERY OIL BURNER REQUIREMENT

OIL BURNER Baffle Brick

OIL BURNER Baffle Brick... The baffle is installed in such a manner that it rests on the combustion chamber and directs furnace gases to all heating surfaces. Results in more economical and efficient performance by reducing the waste heat up the stack.

A. P. Green REFRACTORY PRODUCTS

A. P. GREEN FIRE BRICK CO.

Mexico, Missouri, U. S. A.

PLANTS: Mexico, Mo. • Woodbridge, N. J. • Sulphur Springs, Texas

In Canada: A. P. GREEN FIRE BRICK COMPANY, LTD.

Toronto 15, Ontario

ORDER FROM YOUR A. P. GREEN DISTRIBUTOR; HE'S LISTED IN THE YELLOW PAGES OF YOUR TELEPHONE DIRECTORY, OR WRITE DIRECT

DISTRIBUTORS IN THE PRINCIPAL CITIES OF THE WORLD

Hull heads Heat Exchanger Manufacturers Association

NEWLY-INSTALLED president of the Fuel Oil and Water Heater Manufacturers' Association is R. F. Hull of General Fittings Co., who took office at the summer meeting of the organization held at Pocono Manor, Pa.

Purpose of the organization is increased performance and standardization of shell and tube heat transfer equipment. At the summer meeting, recommended performance standards for high temperature and high pressure heat exchangers were heard and given to the Association's technical committee for consideration and evaluation.

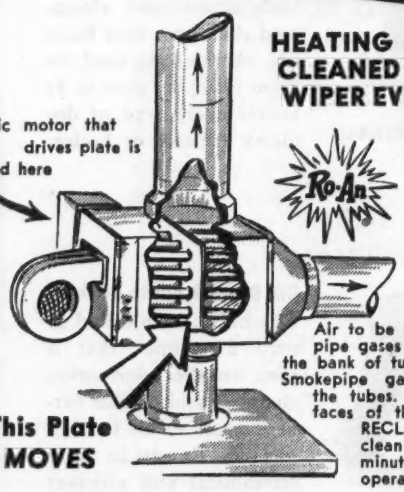
Association membership consists of ten leading manufacturers of shell and tube heat transfer equipment: Adsco Industries; Bell & Gossett Co.; David Engineering Co.; General Fittings Co.; Manning & Lewis Engineering Co.; Patterson-Kelly, Inc.; Richmond Engineering Co.; Sims Co.; Water Tube Boiler & Tank Co., and Yula Water Heaters, Inc.

THIS YOU HAVE NOT SEEN

HEATING SURFACES 100% CLEANED BY MOTORIZED WIPER EVERY 20 MINUTES OF OILBURNER OPERATION.

Electric motor that drives plate is located here

Ro-An



This Plate MOVES

Air to be heated by smokepipe gases is forced through the bank of tubes by a blower. Smokepipe gases flow around the tubes. The heating surfaces of the RO-AN HEAT RECLAIMER are wiped clean of soot every 20 minutes of oilburner operation.

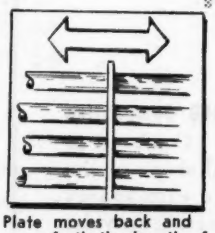
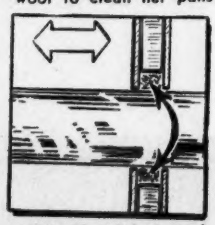


Plate moves back and forth the length of the tubes

Stainless steel wool gently wipes heating surfaces of this smokepipe economizer—like your wife uses metal wool to clean her pans



Ring of stainless steel in pocket formed by three steel plates, which are welded together

• • • **Reduces stack temperatures** by 300°F. to 400°F. on actual jobs. Suitable for horizontal and vertical smokepipe.

• • • Tremendously effective for heating spare rooms, basements, attics, garages, rooms newly added to homes, etc., **free with no increase in fuel bills**

• • • Improves furnace or boiler combustion efficiency from 58% to 74% on actual jobs—based on CO_2 and stack-temperature readings. On jobs better to start out, raises combustion efficiency from 72% to 83%.

• • • **Can be used to reduce fuel bills without heating additional rooms.**

• • • This **smokepipe economizer,** with its motor-driven self-cleaner, is the modern, 100% practical **solution for your problems** caused by high stack temperatures and high fuel bills.

• • • For smokepipes up to 10" size . . . for furnace and boiler jobs, oilfired only. Draft-drop through this unique smokepipe economizer is approximately only .01" (one-hundreths inches water column) for 2.0 gph firing rate, and is down to .0025" for 1.0 gph firing rate. Thus this smokepipe economizer **does not block smokepipes and invite draft problems.**

call or write for complete details, prices and technical literature.

RO-AN HEAT RECLAIMER CORP.,
970 Fulton St. (Route 109) Farmingdale, L. I., N. Y.
Tel: CHapel 9-6080

Austin group, ASHAE's 63rd Chapter, installs Officers

THE CHARTER MEETING of the Austin, Texas, Chapter, American Society of Heating and Air-Conditioning Engineers, was held July 19 and marked the formation of the Society's 63rd chapter.

Principal speaker was John W. James, Chicago, Society president. Also participating were Reg. F. Taylor, Society past president, and D. M. Mills, Society regional director, both of Houston, Texas.

Austin engineers installed as officers of the new group were B. E. Segall, Jr., president; Atwell C. Lagow, vice-president; Perry R. Sisler, treasurer; James L. Rea, secretary; Donald F. Schuett and Ira W. Wilke, board of governors.

James outlined a bright future for airconditioning with an ever increasing demand for such equipment and of the Society with a growing membership accepting new responsibilities for the advancement of heating, ventilating, cooling and airconditioning through research.

The value of Chapter membership, the development of the Austin Chapter and a chapter's function in its relation to the Society were discussed by Taylor and Mills.

Dealer slide Film planned by Humidifier Association

A DEALER TRAINING slide film showing the necessity of humidifiers on heating installations is being planned by The Humidifier Association, Cleveland. The film will be used by the Oil Heat Institute of America as part of its film library.

General Filters, Inc., Novi, Mich., recently joined the Association. The company, manufacturers of oil filters for oilheating installations, added humidifiers to its lines some months ago.

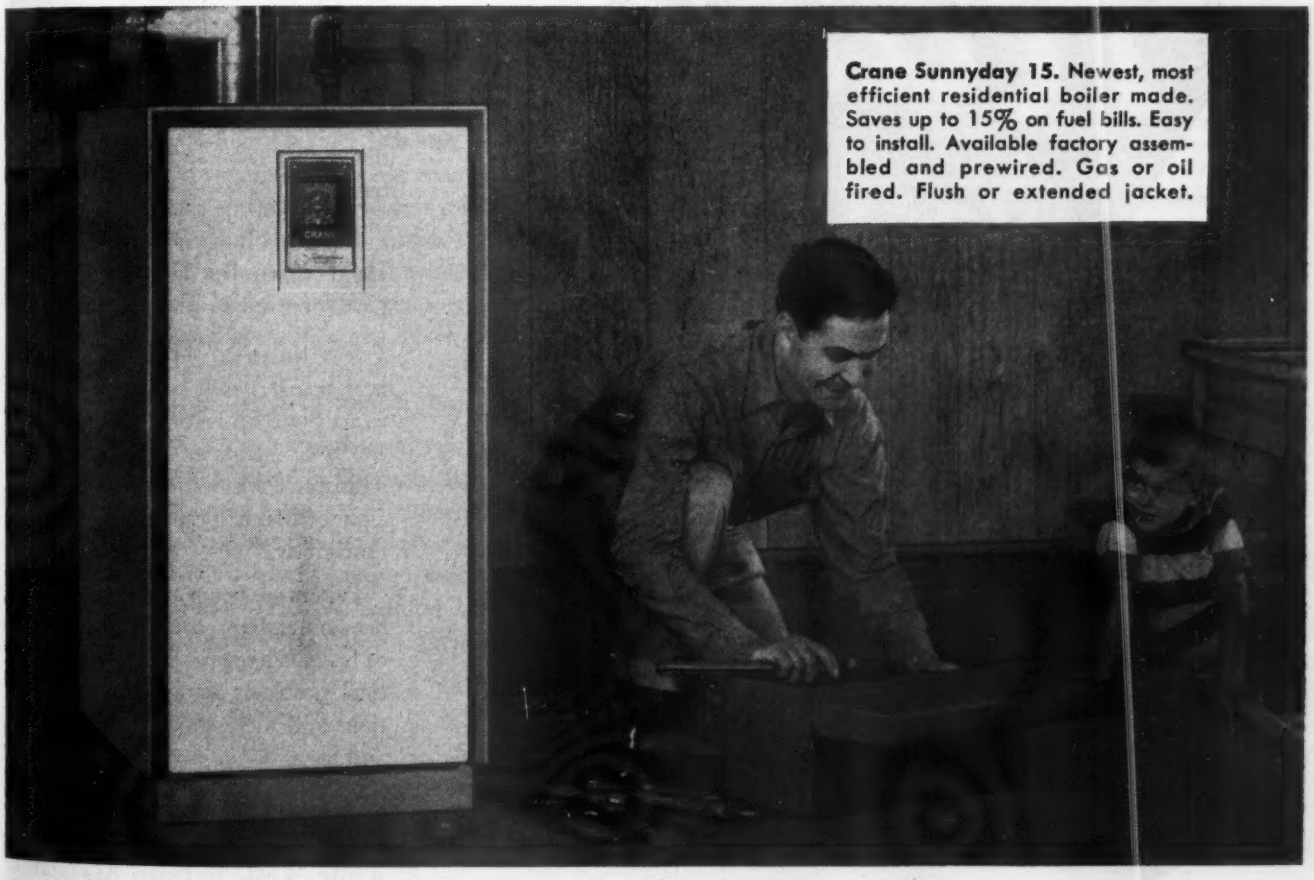
Oil Heating Association opens Toronto Office

THE OIL HEATING ASSOCIATION of Canada has opened permanent offices at 745 Mount Pleasant Rd., Toronto 7, Ontario. Managing director is A. J. Rowe-Sleeman.

CRANE

ISN'T PEACE OF MIND WHAT YOUR REMODELING PROSPECT WANTS...THIS TIME?

(Tip: Tell 'em about the Crane Sunnyday—first and only boiler guaranteed 20 years)


Crane Sunnyday 15. Newest, most efficient residential boiler made. Saves up to 15% on fuel bills. Easy to install. Available factory assembled and prewired. Gas or oil fired. Flush or extended jacket.

What do you tell a cranky prospect who's irritated because his old boiler has given up? Tell him that you can give him peace of mind with a Sunnyday Boiler . . . guaranteed 20 years.

You can be sure he wants this assurance of lasting satisfaction and trouble-free heating. He wants to know that there'll be no expensive replacement of boiler sections for a minimum of 20 years.

Chances are that after hearing the 20-year story he'll be a better prospect for a *complete* remodeling job—a Sunnyday plus Crane Radiant Baseboard panels (the heating that feels like healthful sunshine).

Whether you sell the boiler alone or a complete system, that 20-year guarantee is a powerful sales point. So why not get full details about the complete line of Crane Sunnyday Boilers from your Crane Branch or Crane Wholesaler today?

CRANE CO. 836 South Michigan Avenue, Chicago 5
VALVES • FITTINGS • PIPE • KITCHENS • PLUMBING • HEATING

fueloil & oilheat

HAGO PRODUCTS

1120 GLOBE AVE., MOUNTAINSIDE, N. J.

IN CANADA — RICHARDSON, LTD., 462 GILBERT AVE., TORONTO

Wisconsin Oil Heat Institute conducts billboard Campaign

A BILLBOARD promotion campaign, started August 25 and continuing for 30 days, is being conducted by the Oil Heat Institute of Wisconsin to stress the comfort, safety and automatic features of oilheat.

The campaign makes use of 95 new billboards: 64 in Milwaukee, South Milwaukee and the Cudahy area; 14 on highways leading in and out of Milwaukee; five in Waukesha; four in Watertown; two in Menominee Falls; one in Slinger; one in Cedarburg; two in Oconomowoc; two in Port Washington, and one in Germantown.

Members of the Institute have tied in with the campaign by contracting for additional billboards of their own, displaying Institute posters carrying their own names and addresses, and using the Institute's "baby" emblem in newspaper ads and advertising material.

Heat Transfer Division plans Conference at Penn State U.

A TECHNICAL CONFERENCE on applied heat transfer will be held at Pennsylvania State University, August 11-15, 1957. Co-sponsors will be the Heat Transfer Division of the American Society of Mechanical Engineers and the University.

Papers are being solicited from members on design, construction and use of heat exchangers, economic and practical problems associated with insulation, and methods of instrumentation and tests.

Buncombe Co. (N. C.) Dealers name Walls to head Association

FUELOIL DEALERS of Buncombe County, N. C., met at a dinner meeting in Asheville and formed a new association.

W. Ralph Walls was elected chairman; Lee Thrash, vice chairman, and Mrs. Louise Morgan, secretary. The exchange of credit information will be one of the primary functions of the group.

This *complete* Line Brings More Remodeling Jobs Your Way

The completeness of the GENERAL line of quality Tankless Water Heaters is a real competitive advantage for you in today's big remodeling market. It provides you with the widest possible choice ... all the standard sizes and "in-between" sizes as well ... models for every sized home, apartment, office building, hospital, washroom, etc. Your customer is assured of *continuous* hot water without excessive investment. Moreover, GENERAL quality construction keeps customers sold.

You'll find this same high quality and complete selection in GENERAL Unions, Testite Solder Fittings and other Heating Specialties. Get this extra quality without paying higher prices. Order from GENERAL — and make customer-friends wherever you go. Write for Catalog 21A. General Fittings Co., Box 151C, East Greenwich, R. I.

GENERAL

TANKLESS AND INDIRECT WATER HEATERS AND HEATING SPECIALTIES

GENERAL ALL-COPPER TANKLESS HEATERS
4 sizes, capacities from 4 to 25 g.p.m.

GENERAL TANKLESS WATER HEATERS
9 sizes, capacities from 3¾ to 35 g.p.m.

GENERAL INSTANTANEOUS WATER HEATERS
23 sizes, capacities from 2 to 300 g.p.m.

GENERAL CONVERTERS
Economical means to transfer heat from steam or boiler water to separate hot water radiation system. 26 sizes, flow capacities from 1.5 to 1190 g.p.m.

GENERAL CAST BRONZE SOLDER FITTINGS
Wide variety of types. Each fitting individually tested with air under water . . . they're "TESTITE".

GENERAL UNIONS
100% inspected, all parts interchangeable with similar parts of other unions of same size and type. Available in Black or Galvanized Iron, in sizes ⅛" to 3".

GENERAL SPECIAL-TEES
Three-way reducing fittings in cast iron or bronze . . . simplify fin-tube radiator installations.

GENERAL WATER HAMMER SILENCERS
Cushion shock of excess pressure in either hot or cold water lines.

GENERAL THERMOSTATIC MIXING VALVES
Assure positive, accurate control regardless of flow or pressure variations.

Better Home Heat Council has panel Discussion on Trucks

A PANEL discussion on fueloil trucks, covering what to look for when buying preventative maintenance and vehicle insurance, was held recently by the Better Home Heat Council, Inc., of Connecticut.

The discussion was arranged by the meeting committee including George Rothstein, Sid Berson, Charles Christie and Walter Hyjeck.

Officers of the Council are Merwin Sheketoff, American Coal Co., Hartford, president; James L. McIntyre, Sr., Laurel Oil Co., Hartford, vice president; George Rothstein, Snowman's Oil Service, New Britain, treasurer, and Lee Wood, L. T. Wood, Co., Inc., Manchester, secretary.

Directors include David Blakeney, Esso Standard Oil Co., Hartford; Donald Butler, W. C. Mason & Co., Hartford; Bruno Corridino, C. & R. Oil Co., Hartford; Gustave A. Firestone, Acme Tank & Welding Co., West Hartford; Louis Giannettino, Bell Pump Service Co., Hartford; Arnold Grant, Sr., Hardware City Fuel Co., New Britain, Philip Kaplan, General Oil Co., East Hartford.

Also, Herbert Kay, Kay Petroleum Corp., East Hartford; Frank Kundahl, Crown Petroleum Corp., Hartford; Louis LaBel, W. C. Mason & Co., Hartford; Leo Marquis, Atomic Fuel Corp., Hartford; A. W. Nicholson, Gulf Oil Corp., New Haven; Nicholas Pencheff, Williams Oil Service, Manchester; Albert E. Powell, Parkville Coal and Oil Co., Hartford; L. T. Spencer, Ballard Oil Co., Hartford, Wethersfield, Frank Vonasek, Connecticut Refining Co., Hartford.

National Power Show this Fall features engineering Advances

MANY ADVANCES in engineering design—innovations in instrumentation, automation and testing and the use of improved materials—will be displayed at the 22nd National Exposition of Power and Mechanical Engineering to be held at the Coliseum, New York, November 26-30.

In addition to the exposition, a number of special events will feature Power Show week in New York, among them the 76th annual meeting of The American Society of Mechanical Engineers, which sponsors the show, and the annual meeting of the American Rocket Society.

To date, some 250 leading manufacturers have reserved space for exposition displays.

Chicago Oil Men's Club has annual spring golf Outing

MORE THAN 200 golfers attended the annual spring golf outing sponsored by the Chicago Oil Men's Club at the Medinah Country Club, June 7.

Conn. Petroleum Assn. holds Golf-shore Outing Sept. 13

THE SIXTH annual shore and golf outing of the Connecticut Petroleum Association is being held September 13 at the Pine Orchard Club, Branford-on-the-Sound.

Highlights of the event are a golf tournament, a buffet luncheon and a shore dinner.

FEATURE AFTER FEATURE
...BY FAR THE FINEST!
Klemm
FUEL OIL FILTERS
• Exclusive Cleanable CHEMISTONE Elements • 17 Models
• Choice of Glass or Metal Bowls • Shut-Off Valve (Optional)
The many exclusive customer-pleasing features that you get in Klemm Fuel Oil Filters are positive evidence of quality construction and performance. Repeat sales assure you of lucrative and continued earnings. For safety, economy of operation and trouble-free performance, you'll find it pays to recommend and sell Klemm Filters. See your jobber . . . or write direct.
CHEMISTONE—Genuine filter, not a mere strainer! Traps moisture . . . removes dust, rust and scale to 1/24,000 of an inch.
Klemm PRODUCTS
DIVISION OF
KLEMM AUTOMOTIVE PRODUCTS COMPANY
1722 North Damen Avenue, Chicago 47, Illinois
EXPORT: Guiterman Co., Inc., New York 6, N. Y.
Exclusive: All models available with metal or glass bowl. Other popular I. P. T. sizes.
Model FF-530-V—⅜" opening For: Central heating plants.
Model FF-430-G—⅜" opening For: Central heating plants.
Model JR-60—¼" opening For: Space heaters, floor furnaces, etc.
*Model JR-80—¼" opening For: Space heaters, floor furnaces, etc.
*Model FF-430—⅜" opening For: Central heating plants.

NOW THIS NEW NAMEPLATE...

Century
CEDAR RAPIDS, IOWA

ADORNS A COMPLETE NEW LINE OF 2 & 3 H.P.

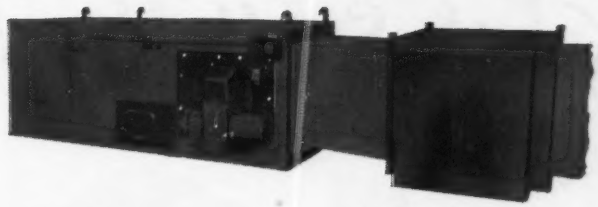
RESIDENTIAL *Year-Round* COMBINATION SYSTEMS

With remote air or water-cooled condensers

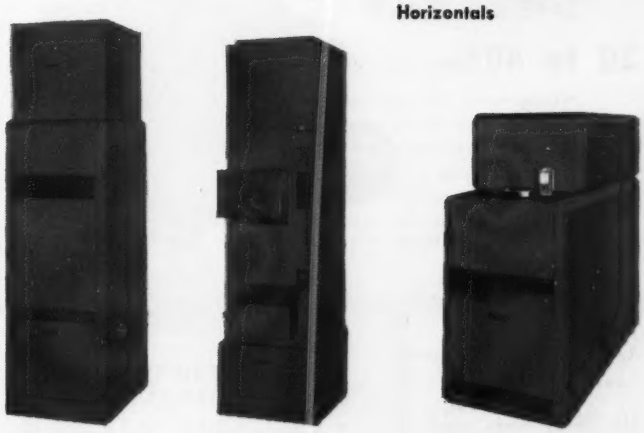
Every one of the 60 forced warm air furnaces in Century's 1957 line, both oil and gas models, can now be obtained as a combination year-round system, including A or H-type cooling coil assemblies in insulated cabinets finished in matching baked enamel.

The air or water cooled condenser and compressor are combined in a single unit for remote installation. You may order complete systems or by components to reduce inventory, either with or without pre-charged and valved tubing.

And as for performance, Century's systems are tested under typical operating conditions in Century's modern cooling laboratory to be sure they will do the job for which they're rated!



Horizontals



Hi-boys Counterflos Lo-boys

2 *and* 3 H.P. REMOTE TYPE AIR-CONDITIONERS

FOR STORES, OFFICES, CLUB ROOMS AND COMMERCIAL ESTABLISHMENTS

- Air or Water-cooled
- Self-contained plenum with 4-way adjustable louvers
- Quiet, rubber-mounted blower
- Large service opening
- Factory assembled cabinet
- Choice of 3 color combinations

Century

CENTURY ENGINEERING CORPORATION
CEDAR RAPIDS, IOWA FOH

Please send me specifications and rating information on the Century line.

Company_____

Attention_____

Address_____

More! More! More!

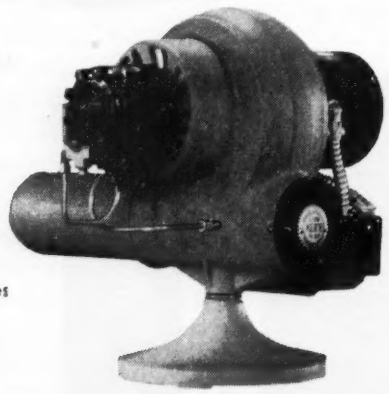
1 CONVERSION SALES
2 REPLACEMENT SALES
3 PROFIT ON EACH JOB

WITH THE **NEW IMPROVED**

Korth Shell Head

OIL BURNER

CUSTOMERS SAVE **20 to 40%** OVER PRESENT FUEL COSTS



- Improved design insures flame stability
- Gives higher CO_2
- Reduces stack temperatures
- No smoke from combustion
- Service-free operation

AVAILABLE IN TWO SIZES

- Model SR-SH-1 .75-1.65 GPH
- Model SR-SH-2 1.65-3.0 GPH
- Pedestal or flange mounted. Complete with M-H delayed oil valve factory mounted.

EASY EXTERNAL AIR ADJUSTMENTS

1 New location of one piece jet line.

2 New screw type adjustment for positioning shell head assembly.

3 New external adjustment for regulating secondary air openings on shell head assembly.

ORDER A KORTH SHELL HEAD BURNER TODAY
Prove to yourself it is all we claim.

SILENT KORTH OIL HEAT

OTHER KORTH BURNER MODELS AND SIZES FROM .75 TO 20.0 GPH TO MEET ALL REQUIREMENTS.

ECKHART MFG. CO., INC.
UNION, NEW JERSEY

CANADIAN DISTRIBUTOR :
Dragon Heating Co., Ltd., 2110 Rue Clark, Montreal.

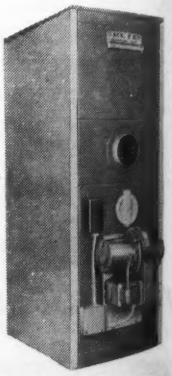
WESTERN GERMANY DISTRIBUTOR:
01-Heizungs Bau, Schloss-Strasse 100, Stuttgart, W.

New Products

Each New Products item has an identifying number. If you want more information on any equipment described here send the coupon on page 170 to FUELOIL & OIL HEAT, *2 West 45 St., New York 36, N. Y., and identify the product by circling its number on the coupon.*

Heil introduces two new low-cost winter Airconditioners for Homes

TWO WINTER AIRCONDITIONERS—the Parkway Model DF-2 (pictured) and the Parkway Model JF-2—designed for low-cost installation have been introduced by the Heil Co., Milwaukee.



The DF-2, a counterflow, oilfired conditioner, is designed for use with perimeter and floor panel heat distribution systems.

The DF-2 is 68" high, 25" wide and 28" deep; delivers a bonnet capacity of 112,000 Btu per hour; has an oil-firing rate of 1.0 gph, and a normal air delivery at a 90° rise of 1090 cfm. It is completely pre-assembled and pre-wired for simple installation.

Specifications for the JF-2 oilfired highboy conditioner are the same as above. It has been designed for small- or medium-sized homes and can be installed in little more than two-foot square of space in basement, alcove or utility room. It, too, is pre-assembled and pre-wired.

Made by: The Heil Co., Milwaukee, Wis.

Circle E1 on coupon, page 170

Rodale redesigns Tattelite Tester for AC-DC Currents, 110 to 550 Volts

A REDESIGNED MODEL of the Rodale "Tattelite" tester for testing AC or DC currents from 110 to 550 volts is incorporated in a chrome finished pocket clip, with extended bakelite case. The neon tester is commonly used to test live and ground wires in a circuit, short circuits, blown fuses, defective resistors, open circuits, static, polarity, etc.

Made by: Rodale Mfg. Co., Inc., Emmaus, Pa.

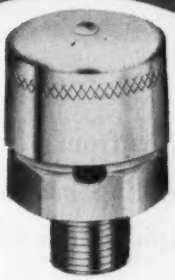
Circle E2 on coupon, page 170

DOLE

what every contractor should know

DOLE No. 1A VARI-VENT AIR VALVE

The famous Dole Air Valve with a rotating cam that provides an infinite number of venting speeds from slow to fast. Ideal for any gas or oil fired one pipe steam heating system.



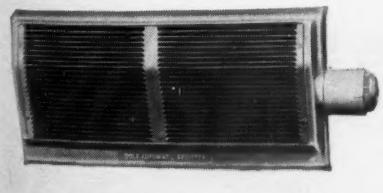
DOLE 20 SR. AIR VENT

This high quality hot water air valve provides an automatic air eliminator, a manual shut-off and a manual air vent. A selector dial permits various settings and provides for faster venting.

DOLE No. 3 AIR VALVE

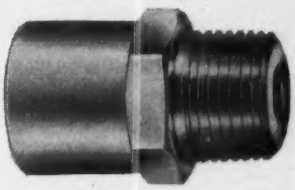
This valve is designed to provide the shortest possible time in venting a hand-fired heating system. Gives free and steady venting at pressures up to 10 lbs. Provides a positive seal against water.

1906 Control with DOLE Trade mark 1956 50th Anniversary



DOLE AUTOMATIC REGISTER

This register controls individual room temperature automatically. Ideal for use on new or old forced warm air heating systems.



DOLE FLOW CONTROL VALVE

A simple, inexpensive valve that will provide a constant rate of flow despite variations in normal water pressure. Prevents wasting water and yet provides adequate flow. Ideal for drinking fountains, shower heads, tankless water heaters, flush tanks and other applications.

For information, call your jobber or write:

THE DOLE VALVE COMPANY
Plumbing and Heating Division
1933 Carroll Avenue, Chicago 12, Illinois

Control with

DOLE

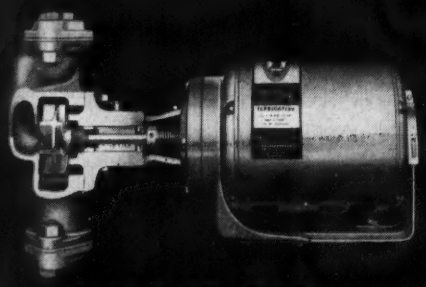
(TRADE MARK)

"NEW FROM TACO"

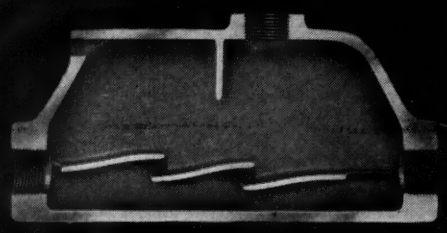
"New from Taco" are words you've seen often. And they are words with real meaning, backed by a continuing program of product "firsts" and new product introductions from Taco.

Taco research, experimentation and quality control production will continue industry leadership in the development of better products for our expanding markets.

Typical TACO "Firsts"



TACO CIRCULATORS . . .
first with interchangeable flanges.



TACO AIR-SCOOP . . .
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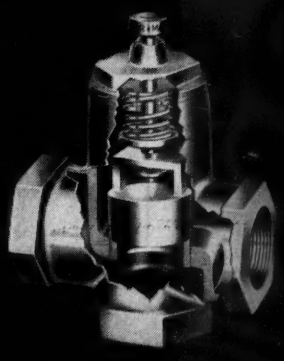

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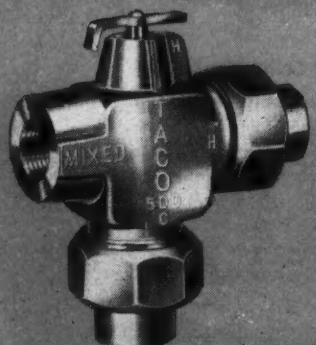
NEW FROM TACO in 1955-56



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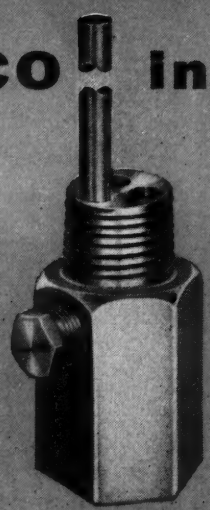
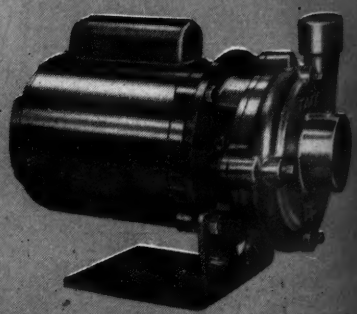
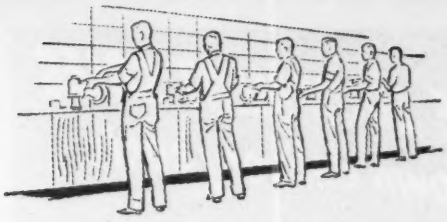


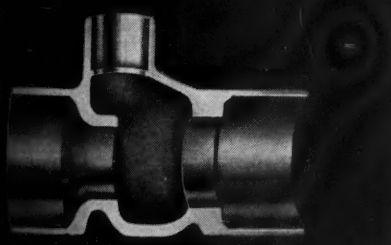
TACO TANK DRAINER . . .
for fast draining of water-logged expansion tanks.



TACO SERIES 170 CENTRIFUGAL PUMP . . .
light in weight, low in cost, extremely compact, a pump that offers consistent peak performance.



more than a slogan



TACO SUPER VENTURI . . .
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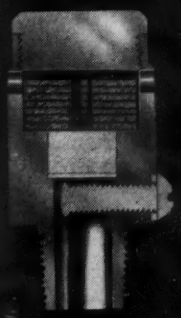

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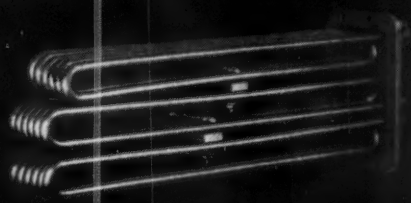

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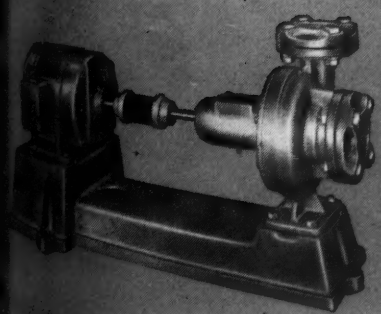
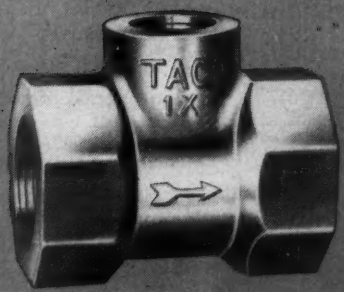


TACO 140 SERIES PUMP . . .
for quiet, vibrationless operation on large installations.

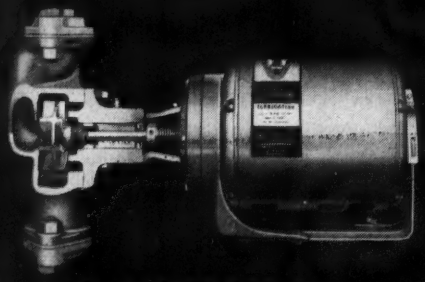


TACO VENTURI FITTING . . .
a precision-machined fitting based on "Bernoulli's theorem."

Taco

TACO HEATERS INCORPORATED
1160 Cranston Street, Cranston 9, Rhode Island
Corporate Office: 342 Madison Ave., New York 17, N. Y.
In Canada: Taco Heaters of Canada, Ltd.,
4 Gilead Place, Toronto 2

Typical TACO "Firsts"



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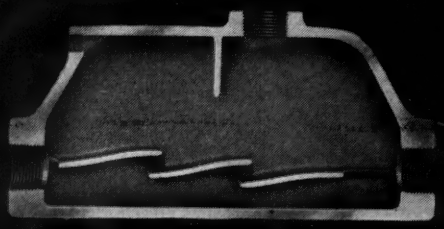

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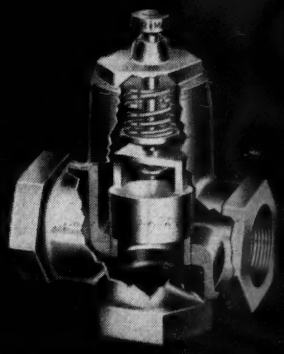

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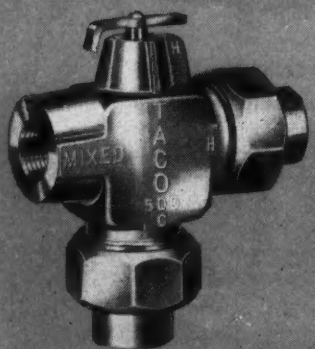

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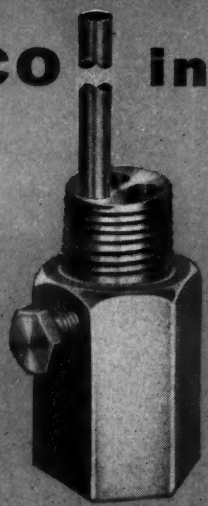

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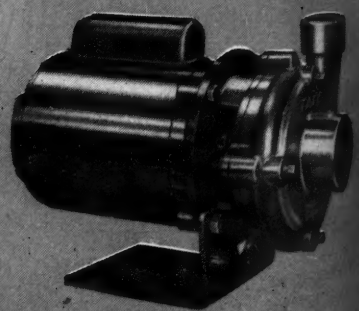

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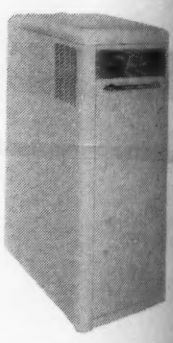
light in weight, low in cost, extremely compact, a pump that offers consistent peak performance.

INCREASE EQUIPMENT SALES
...cut down delivery costs
Sentry ODF* Tank Gauge tells drivers what they want to know
at point of delivery!
"THAT LITTLE SENTRY GAUGE SURE SAVES US BOTH A LOT OF TROUBLE!"
TELLS WHEN OIL IS NEEDED
*Oil Dealer's Friend
. . . HOW MUCH IS NEEDED
. . . WHEN TO STOP FILLING
E 1/4 1/2 3/4 F

. . . . New Products

Oilfired "Mark III" latest addition to National-U.S. home heating Packets

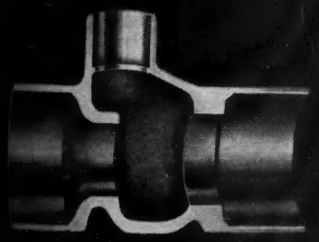
NEWEST addition to the National-U. S. Packet line of completely automatic, all-in-one, home heating units is the oilfired Mark III.



The new Packet is completely assembled and wired at the factory, with boiler, burner, tankless heater, low voltage control system, altitude-pressure, gauge, relief-valve, 1½ in. circulator, etc., shipped as a single unit, ready for installation and requiring only service connections.

Four sizes of the Mark III offer SBI net ratings from 87,000 to 189,000 Btu per hour, and from 580 to 1,260 sq. ft. of water radiation. Dimensions range from 45⅜" to 47¾" high; 20½" to 25½" wide, and 39⅛" to 51⅞" deep.

A built-in-dual temperature hot water system provides 125-degree tempered water for faucet use and, simultaneously, high temperature laundry-rated water. A triple action control system incorporates an Aquastat, transformer



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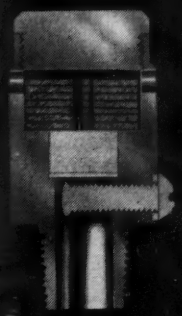

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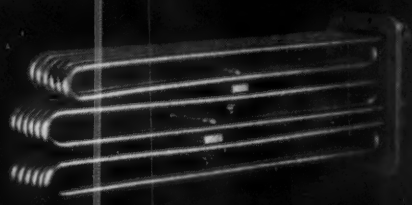

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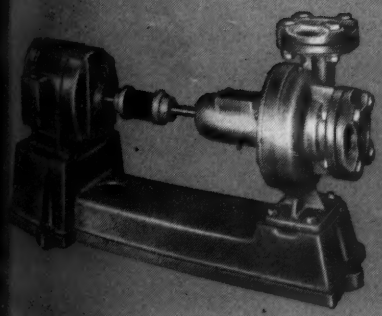

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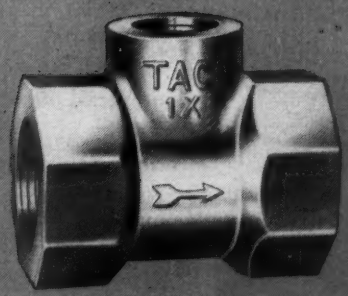

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25 METERS at big New Haven terminal speed

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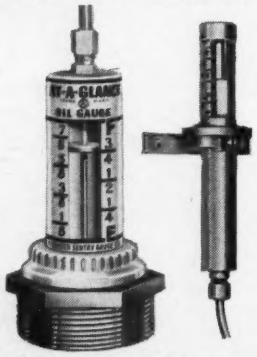
STOP FILLING
Sentry "ODF" remote reading gauge

ONLY *Sentry* OFFERS SUCH A COMPLETE LINE OF DIRECT AND REMOTE READING TANK GAUGES

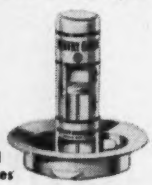
Above is SENTRY'S newest — The ODF At-A-Glance tank gauge that's setting new records in building sales and customer goodwill. Located outside of building at fill pipe, this easy-to-read weather-proof gauge shows the exact oil level in the indoor tank. Saves costly time consuming trips to basement, unnecessary hose unreeling and eliminates over-flow. Permits delivery without disturbing customer.

Other constant-register SENTRY gauges include combination tank and remote reading, barrel gauges, direct reading, and gauges for stove and space heater tank. Write today for full information about these fast moving business getters. Advertising aids available.



Combination At-A-Glance tank and remote reading gauges

Sentry stove and space heater gauges


Sentry At-A-Glance barrel gauges

On guard— 24 hours a day

Sentry At-A-Glance tank gauge

Sentry superior quality Therma-Gauge

KRUEGER *Sentry* GAUGES
GREEN BAY · WISCONSIN

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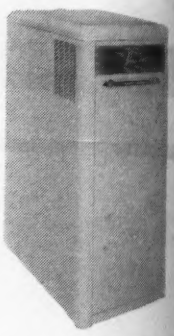

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A built-in-dual temperature hot water system provides 125-degree tempered water for faucet use and, simultaneously, high temperature laundry-rated water. A triple action control system incorporates an Aquastat, transformer and a relay in one assembled unit.

Made by: National-U. S. Radiator Corp., Johnstown, Pa.

Circle E3 on coupon, page 170

New, improved hot water air vent by Ra-Rich can be vented manually

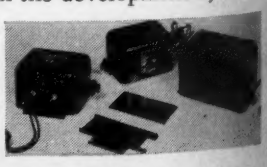
AN AUTOMATIC hot water air vent that can be vented manually without use of tools has been introduced in the Ra-Rich air vent #1W. Another feature of the new vent is its fast cycling. It is chrome-plated and can be used on hot water heating systems, convectors, free standing, baseboard and panel radiation.

Made by: Ra-Rich Mfg. Corp., Holtsville, N. Y.

Circle E4 on coupon, page 170

Transformers to fit all Timken Burners simplifies stock and service Problems

STOCKING of transformers and the servicing of Timken burners is greatly simplified with the development by Service and Supply Co. of new universal mounting brackets which, in conjunction with three transformers manufactured for them by Jefferson Electric Co., will fit all Timken burners.



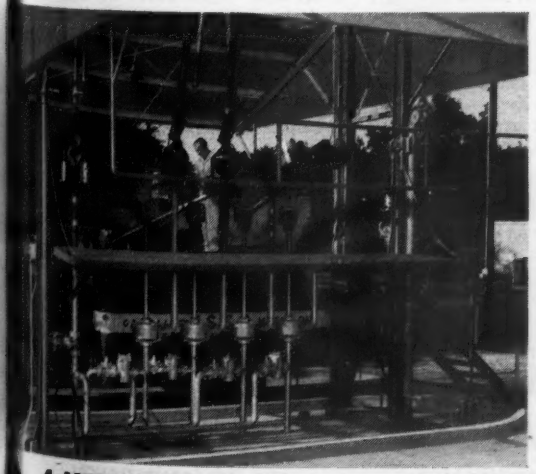
In addition to simplifying the stocking of transformers, the prices of the new units are greatly reduced.

Made by: Service and Supply Co., 914 W. Wisconsin Ave., Appleton, Wis.

Circle E5 on coupon, page 170

25 METERS at big New Haven terminal speed loading of 8 transports and trucks simultaneously. All are Neptune Remote Control Print-O-Meters

11 METERS at Esso Standard Oil Company's Waltham terminal are also Red Seal Remote Control units. Busy meter often handles 150,000 gals. per day.



4 METERS keep track of product and simplify billing at Esso Standard Oil Company's Rockingham, N. C. plant. These are accurate 3" Red Seals

FROM BIG TERMINALS TO small BULK PLANTS

Red Seal Meters provide reliable stock control

No matter how big or small, you can do what these terminals and bulk plants are doing . . . get trucks in and out faster, get closer control over inventory and billing, with big savings in manpower and accounting costs.

For larger plants, install the Neptune Remote Control Metering system, now proved by 11 years actual service. Keeps all control firmly under the thumb of one man. Automatic interlocks prevent withdrawal of any product until authorized by locking ticket into printing register in office.

Neptune offers the finest of bulk meters, from 1" to 6", for flow rates from 2½ to 1000 gpm. All have the same dependable accuracy you now enjoy with Red Seal tank truck "compacts." Ask your Red Seal jobber or our nearest branch for details.

NEPTUNE METER COMPANY

19 West 50th Street. New York 20, N. Y.

NEPTUNE METERS, LTD. 1430 Lakeshore Road, Toronto 14, Ontario.

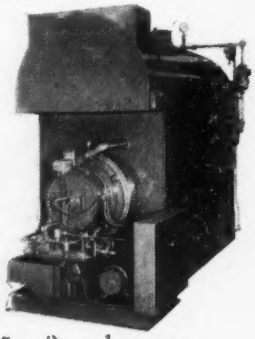
Branch Offices in Principal American and Canadian Cities.

neptune

RED SEAL METERS

York-Shipley packaged fire-tube Boilers need no Stack, Brickwork

FIRE-TUBE boiler-burner units, with the installation and operating advantages of the Scotch marine type "Steam-Pak" packaged steam generators, offered by York-Shipley eliminate the need for stack, pitting and brickwork. Water cooling virtually eliminates replacement and maintenance cost of the carborundum combustion chamber and increases boiler capacity.



A four-pass arrangement of the boiler tubes assures maximum heating efficiency. The unit can be furnished to supply either low-pressure steam (15 psi) or hot water (30 psi). Firing may be by No. 3, 5 or 6 oil and/or natural or manufactured gas.

Double-shell construction allows combustion chamber to be surrounded by a 3½-in. water blanket. Firing tube includes a 4-gallon circular reservoir where fueloil may be preheated, thus eliminating the need for a below-the-water-line heater. The firing head, chassis assembly and windbox are the same as on the "Steam-pak" generator.

The new "YFB" line is offered in equivalent net steam ratings of 3,000 to 35,000 sq. ft. and in equivalent net hot water ratings of 4,800 to 56,000 sq. ft.

Made by: York-Shipley, Inc., York, Pa.

Circle E6 on coupon, page 170

Tankit develops liquid Deodorant for fueloil in push-button Can

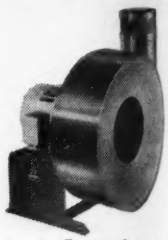
AN EFFECTIVE liquid aerosol spray deodorant for fueloil odors developed by Tankit Co. is packaged in a compact, pocket-sized, push-button spray can, containing 65 average applications. One can deodorizes over 400 square feet of surface and gets into hard-to-reach places.

Made by: Tankit Co., Newark, N. J.

Circle E7 on coupon, page 170

New line of turbo Blowers introduced by Hauck in Sizes 250 to 2650 cfm

A NEW LINE of turbo blowers for supplying air to gas and oilburners are being marketed by Hauck Mfg. Co. in a large number of sizes from 250 cfm at 8 oz. pressure to 2650 cfm at 24 oz. pressure.



The blower is equipped with a sturdy aluminum impeller and hug in a balanced impeller assembly. Blower casing is of fabricated steel with spun steel head having circular reinforcing rings. It is driven by a standard open frame ball bearing motor. The discharge position on direct motor-driven blowers can be rotated in the field to suit conditions. A flexible connecting sleeve with clamps is included.

Made by: Hauck Mfg. Co., Brooklyn 15, N. Y.

Circle E8 on coupon, page 170

Well, Sam . . . . . I'll Tell You . . .

"It hasn't always been this way . . . I used to be out makin' those service calls at all hours, couldn't even enjoy a holiday. You know, run out to the place and make an adjustment, figure that's the trouble and hurry back to bed. Just get to sleep—the phone rings—and out you go again to try and find the real trouble. I went through all that, too. Then I wised up. Got Armstrong. And Sam, there's just nothin' like it. Sure, I make service calls, clean the dust off the thermostat points, minor adjustments, things like that. But Armstrong units just don't need all the servicin' other kinds do. And what's more, my Armstrong wholesaler knows this business up one side and down the other . . . from A to Z. He showed me just exactly how to service Armstrong units so I never have to make the same trip twice. With his help I can fix 'em and they *stay* fixed. No second calls for me! And son, does he know heatin' layouts. And coolin', too! Why I just couldn't get along without him."

"Say, I've been doin' this all wrong! Glad you told me, I'm gonna call that Armstrong wholesaler right now!"

And why don't you? Your Armstrong wholesaler can give you the whole money-making Armstrong story. Call or write today!

Yep, it sure is nice bein' an Armstrong dealer.

just look at all these advantages . . .

* A complete line of furnaces and air conditioners
* Wholesalers who do your stocking for you
* National advertising in top consumer magazines
* Prospect-catching promotional material
* Service and product meetings in the field
* Dealers heating and air conditioning schools at the factory
* And you're selling quality equipment

Armstrong Furnaces

YOUR ARMSTRONG WHOLESALER ready to assist you . . . all-ways

AND AIR CONDITIONERS
COLUMBUS 8, OHIO

Another Walker Engineering Triumph!

New! SHUR-FLO Draft Inducer-Regulator

Corrects Troubles Caused by Insufficient Draft!

Completely Engineered Combination Unit Sells for Much Less Than What You'd Expect To Pay!

Here's a new product that will correct any difficulty caused by insufficient draft . . . and correct it at a cost so low it's almost unbelievable!

The new Walker SHUR-FLO draft inducer-regulator combination both inspirates and regulates. After draft has been established by inducer fan, the sensitive automatic Walker regulator holds draft at maximum combustion efficiency. SHUR-FLO keeps chimney dry, stops pulsation and smoking, eliminates soot and odors.

Big Aid to Contractors and Installers

With the Walker SHUR-FLO, contractors and installers can eliminate draft troubles in both old and new housing with a single installation. The product is particularly effective in modern homes where the trend is toward lower chimney heights. Installation is simple, fast and requires only elementary wiring provisions in most cases.

Tests Prove High Efficiency

The Walker SHUR-FLO has been exhaustively tested by the largest and most prominent industrial research organization* in the world. Their findings show that this new combination unit operates at highest efficiency under even the most adverse conditions.

The SHUR-FLO unit is constructed of heavy gauge galvanized steel. The motor is a heavy-duty, fractional HP that consumes little current. Motor is specially built for draft inducer service and is mounted so that it is shielded from chimney heat. Motor requires little maintenance. Regulator and inducer fan are both constructed of corrosion-resistant material.

For the full facts on this revolutionary unit, see your supplier or mail coupon below.

*Name upon request.

Look to Walker FOR A COMPLETE LINE OF DRAFT CONTROL PRODUCTS

Walker, with over 30 years of draft control experience, produces automatic regulators for a complete range of installations . . . from small space heaters to the largest heating plants in factories and multiple housing projects. Be sure to inquire about the Walker Royal Purple Model, the only automatic draft control that's absolutely impregnable to soot, carbon, corrosion, dust. Another Walker first in the industry!

Type Z

Type 34B

Type BB

Wrap-Round Tee Joint

GET THE FACTS NOW — MAIL COUPON AT ONCE!

Walker Manufacturing & Sales Corp.
1750 Penn St. St. Joseph, Mo.

Information please! Send me details on items checked.

- ☐ Walker SHUR-FLO Draft Inducer Regulator
- ☐ Walker Royal Purple Model
- ☐ Automatic Draft Regulators for small installations (space heaters, circulators, water heaters, trailer stoves, etc.)
- ☐ Industrial draft regulators for schools, office buildings, apartments, stores and manufacturing plants.
- ☐ Venturi-Top chimney cap for chimney trouble with backdraft.

Your favorite supplier's name please (write in)_____

Name_____

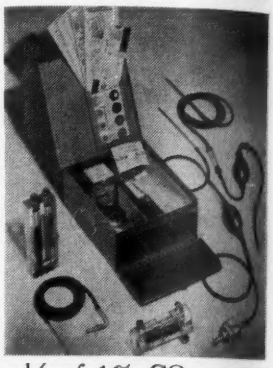
Address_____

City_____ State_____

Both mouse and Nu-Way Burner are quietly going about their business . . . with the least amount of disturbance. And that's just typical of Nu-Way performance. There just aren't any unnecessary noise-causing vibrations. Why? Because housing is machined for motor pump alignment to only 0.0015! Special coupling silently absorbs this minute alignment variation. And the sand-cast aluminum alloy housing is stronger, thicker . . . won't warp or twist . . . holds motor and pump in permanent alignment. Ask for Bulletin N-1132. Write Nu-Way Corporation, Dept. FO-96, Rock Island, Illinois.

Dwyer test Kit checks CO2, stack Heat, Smoke—in 30 seconds

EVERYTHING needed for a complete check on overall combustion efficiency is contained in the new Dwyer No. 1100 combustion test kit which features simplicity of operation, accuracy and speed—once set up, gauges can be read in 30 seconds.



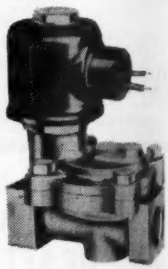
The kit checks CO_2 content, draft, stack temperature and smoke in commercial, industrial and residential installations. The handy, portable kit is permanently accurate—reading to plus or minus ½ of 1% CO_2.

Made by: F. W. Dwyer Mfg. Co., P. O. Box 373, Michigan City, Ind.

Circle E9 on coupon, page 170

General's diaphragm Type solenoid Valve multipurpose shut-off Control

A DIAPHRAGM type solenoid valve with full flow ports, General Control's K-181 is capable of handling large capacities with a minimum pressure drop, thus making it suitable for shutoff control of a large variety of liquids and gases over a wide range of operating pressures up to 250 psi.



Exceptional flexibility is attributed to General Control's multipoised design, a feature which provides for positive operation in any position, including side and inverted mountings.

The K-181 is available in ⅜" and ½" ips, and is offered in two basic models. It is normally closed and features forged brass body, packless construction, bubble-tight shutoff and two wire continuous duty solenoids having exceptionally long life.

Made by: General Controls Co., Glendale, Cal.

Circle E10 on coupon, page 170

Expand-O-Matic heat Exchanger now in all Armstrong industrial Furances

THE NEWLY-DEVELOPED "Expand-O-Matic" heat exchanger now is being used in all industrial furnaces manufactured by Armstrong Furnace Co. "Expand-O-Matic" allows for the expansion of the heat exchanger equally in all directions.

It eliminates the oil-canning noise effect of heat exchangers which have no allowance for expansion from front to back. It also adds to the life of the heat exchanger by distributing expansion strain evenly in all directions.

Made by: Armstrong Furnace Co., W. Third Ave., Columbus, Ohio.

Circle E11 on coupon, page 170

Forrest H. Tower started with gasoline in 1934 and added fuel oil the next year. In addition to a string of service stations he operates four trucks exclusively on fuel oil. He was president of Oregon Heating Industries for 1951-52.

HAVE YOU THE *SECRET**...

of never letting your customers run low on fuel?

A driver for Tower Oil Company† pulled in to deliver 300 gallons of fuel oil. The customer asked, *"What's Your Secret?* Not once in 10 years have you let me run low on fuel!"

"That's easy," said the driver, "our office is mechanized." He might have gone on to explain that Tower Oil considers its Degree-Day Kardex system is just about foolproof. Consumption record for each customer is kept in a single Kardex pocket. On the basis of this record delivery routes are set up for maximum efficiency – even to finding snowed-under fill pipes instantly! And in the office it permits one girl to get out statements for more than 1500 fuel oil accounts, as well as a growing gasoline distribution business.

Simplicity of Kardex Degree-Day System

The Degree-Day system of fuel oil delivery control tells in advance

- *(1) *Which* customers need fuel oil
- (2) *Where* they are located
- (3) *When* delivery should be made
- (4) *How* much they need
- (5) *What* kind they use

What's more, all this information is instantly available at the flip of a finger... in fact, a mere glance at the Kardex visible margins shows the name, address and when next delivery is required.

†Portland, Oregon

Increase Profits... Reduce Costs

This Kardex Degree-Day system gives you at a glance the information to greatly improve your service... to effect important economies. You can cut delivery costs through better routing ... reduce "outs" and expensive special trips. You will actually sell fuel oil at a bigger profit since customers' needs are filled "automatically."

Get the fully detailed story on – "What Every Fuel Oil Dealer Should Know About Cost-Saving Delivery Control." Send the coupon below for your copy of folder KD778.

Remington Rand, Division of Sperry Rand Corporation
Room 1987, 315 Fourth Avenue, New York 10, N. Y.

Kindly send literature KD778

NAME_____

TITLE_____

FIRM_____

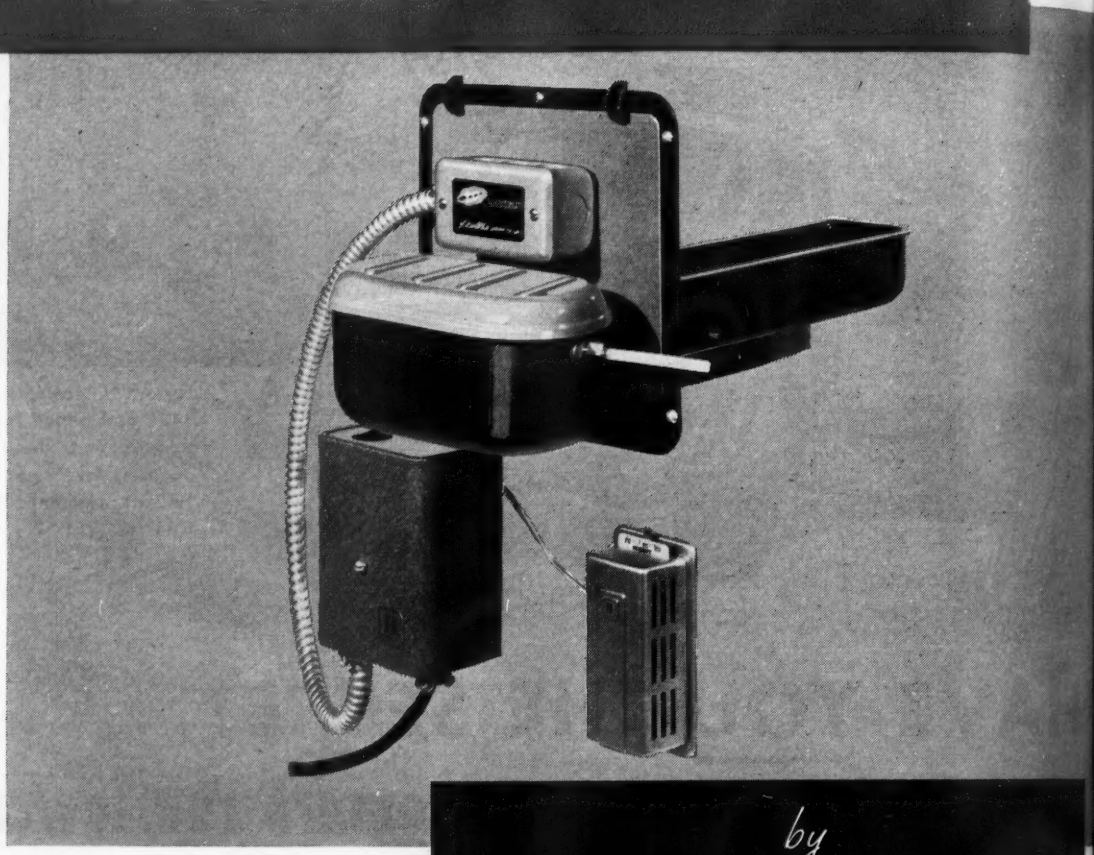
ADDRESS_____

CITY_____ ZONE____ STATE_____

Remington Rand

DIVISION OF SPERRY RAND CORPORATION

new electric humidifier



by Skuttle

MODEL 400
HUMIDIMATIC

automatically creates

and controls humidity

Set the humidistat for the desired degree of humidification and forget it. It's that simple with Skuttle's new Electric Humidifier. Designed for warm air furnaces, Model 400 maintains a constant humidity, automatically.

Vapor is produced, independent of heat from the plenum. A relay transformer is connected to a 650 watt heating element located in the water pan. Once the humidistat calls for more humidity, evaporation of the water takes place in less than a minute. Circulation is achieved by means of the blower on the furnace.

Ideal for large homes, Model 400 is capable of vaporizing 27 quarts of water in 24 hours! As with all Skuttle humidifiers, it comes equipped for automatic water feed. No evaporating plates are necessary. For plenum or trunkline installation.

Skuttle MEANS BUSINESS IN HUMIDIFIERS

more *NEW* features than ever before

NEW Humidex Tablets

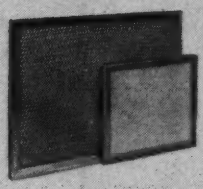
PRESERVES HUMIDIFIERS BY PREVENTING RUST

The destructive nature of natural elements found in domestic water can raise havoc with the efficiency of any humidifier if left unattended. By using Skuttle's new Humidex Tablets in the float tank of the humidifier, you can put an end to the damage caused by rust and corrosion.

Humidex Tablets eliminate costly service calls by keeping all vital operating parts free from clogging. "Scale" is reduced to a sludge that is easily rinsed in minutes.

Economical for the user, there's extra profit for you! Include a package of Skuttle Humidex Tablets with the installation or service of a humidifier. Each carton contains 12 tablets — enough for the entire heating season.

NEW Electronaire Filter



This increasingly popular duct type installation does an exceptional job of humidification. Note how the unit is installed on the bottom outside of the trunkline, leaving only the plates entirely exposed to give maximum evaporation without any obstruction. Airflow scrubs both sides and full length of each Vapoglas Plate.

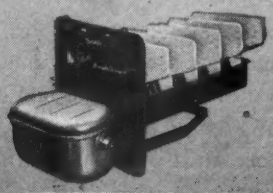
Electronaire represents a new concept in permanent air filters for furnaces and air conditioners. The filtering agent is the new miracle fiber, Acrylast, a product of Dow Chemical Company. Its electro-static properties grip and hold the dust, dirt and pollen that would go thru an ordinary filter.

Electronaire will never rust, corrode, or deteriorate. Aluminum frame and galvannealed steel grille last a lifetime and maintain uniform rigidity. There is nothing to wear — nothing to replace. Simply wash in plain water to clean. No oiling is required.

Standardize on

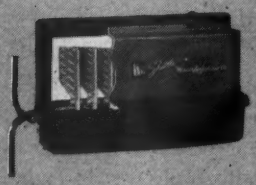
Skuttle

COMPLETE LINE WITH INTERCHANGEABLE PARTS



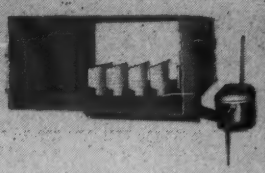
Model 600-B

The most popular and successful of all humidifiers for many years. More than two million are in use today. It's the humidifier for warm air furnaces of the standard type, including winter air conditioning.



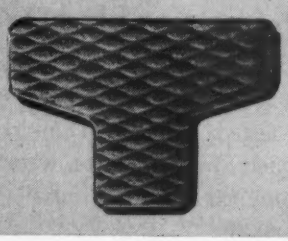
Model 450

Hangs on the side of the heater — evaporating plates reach into the air stream. Useful in counterflow, highboy, floor furnaces and space heaters, where space doesn't permit the use of Series 600.



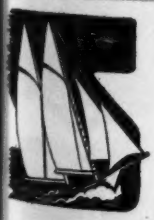
Model 760

This increasingly popular duct type installation does an exceptional job of humidification. Note how the unit is installed on the bottom outside of the trunkline, leaving only the plates entirely exposed to give maximum evaporation without any obstruction. Airflow scrubs both sides and full length of each Vapoglas Plate.



Patented Vapoglas Plates

When next you replace evaporation plates, replace with pure glass wool Vapoglas Plates. They last longer without clogging and absorb more water than any other plate in use today. Standard on all Skuttle Humidifiers using plates, sell Vapoglas Plates for replacement and make a good profit!



Skuttle MANUFACTURING COMPANY

MILFORD, MICHIGAN

In Canada: Contact WAIT-SKUTTLE CO., OAKVILLE, ONTARIO

OILHEATING BOOKS

OILHEATING SNAGS

This book gives the solution to many of the Everyday Snags that annoy you in installation and service. We've been working on them for years. They are all simple and practical answers to the most common goat-getters on jobs. It's an 8½ by 11 inch book of 64-pages.

$2.

HEADING OFF TROUBLE IN DOMESTIC OILHEATING

This book contains articles about the most important precautions to take in installations and service and thereby cut down the number of service calls. The selection is about those things which give the greatest amount of future trouble for service men. A highly practical compilation of pieces from FUELOIL & OIL HEAT. It's a 64-page book 8½ by 11 inches.

$2.

INSTALLING THE DOMESTIC OILBURNER

This is the first practical guide on oilburner installation. It contains the most significant articles from FUELOIL & OIL HEAT that cover all phases of installation step by step. It is 8½ by 11 inches and contains 64 pages. Illustrated with numerous diagrams, charts and photos.

$2.

LOW PRESSURE BURNERS

Only book other than manufacturers' manuals that gives a full picture of low pressure burner principles of operation and construction—Winkler, Oil-O-Matic, G. E., Hart, Hev-E-Oil. Skeletonized diagram of each make of burner makes them more understandable. The new booklet is 8½ by 11 inches, contains 20 pages.

$1.

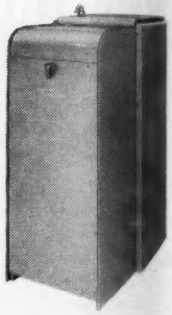
Please, no C.O.D. orders! Mail remittance with order. We pay postage.

FUELOIL & OIL HEAT

2 W. 45 St. New York, 36

3½ gpm tankless Heater now optional Equipment on Oilmaster 56 Series

A TANKLESS HEATER, capable of providing continuous domestic hot water at the rate of 3½ gpm, now is available as optional equipment on all models of the new Oilmaster 56 Series of medium-price oilfired cast-iron boilers by Thatcher Furnace Co.



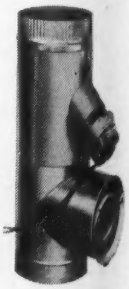
Designed to fit entirely within the Oilmaster 56, the tankless heater conserves space. It is available in six models, three each for steam and water. Gross IBR ratings at output range from 97,000 to 168,000 Btu.

Made by: Thatcher Furnace Co., Garwood, N. J.

Circle E12 on coupon, page 170

Combination draft Inducer-Regulator by Walker suited to all Installations

A COMBINATION draft inducer-regulator developed by Walker is adaptable to oil, gas, stoker and hand-fired installations.



The Walker Shur-Flow inspirates draft immediately in flue or chimney where natural draft is deficient and corrects troubles caused by poor chimney construction. Once draft is established, it is held at maximum combustion efficiency by automatic regulator.

The Shur-Flow unit is constructed of heavy gauge galvanized steel, the regulator and inducer fan both of corrosion-resistant material. It is powered by a heavy-duty, fractional hp motor, specially built for draft inducer service and located in a position shielded from heat. It is available for pipe sizes of 4" through 10".

Made by: Walker Mfg. and Sales Corp., 17th and Penn St., St. Joseph, Mo.

Circle E13 on coupon, page 170

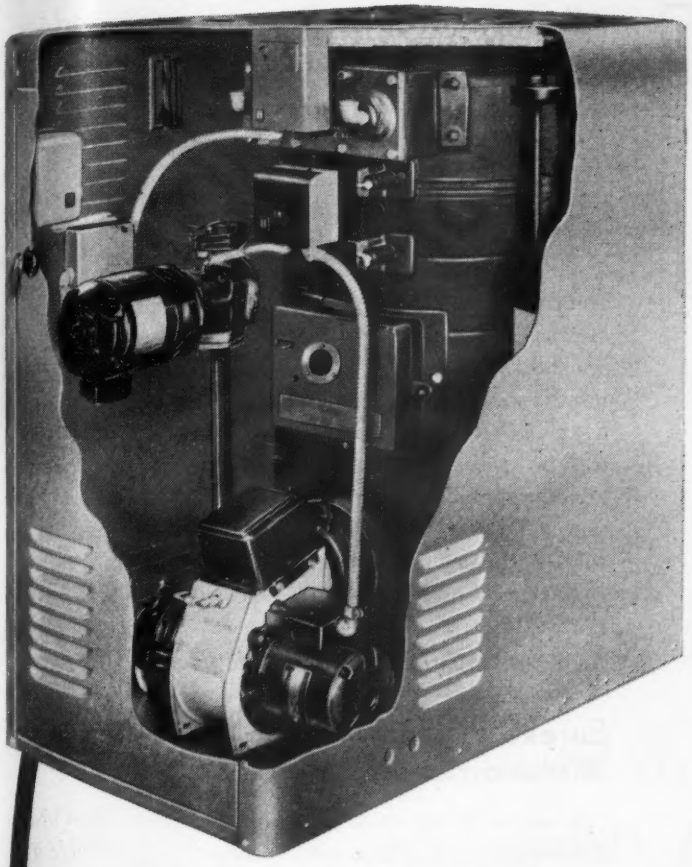
Dunkirk Lex-Pak Boilers shipped completely assembled, factory tested

COMPLETELY assembled with jacket, burner, circulator, controls, relays and all operating parts in place, and factory wired and tested, the new Dunkirk Lex-Pak boiler for oilfired hot water systems is shipped ready for installation and hookup.

Exclusive patented honeycomb design of flue ways provide maximum heat transfer in minimum space and with minimum weight. Combustion chamber is completely water backed by wet base design, while built-in tankless heater coil delivers 3 gpm.

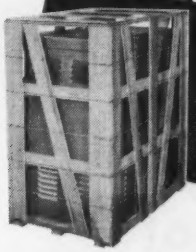
Made by: Dunkirk Radiator Corp., Dunkirk, N. Y.

Circle E14 on coupon, page 170



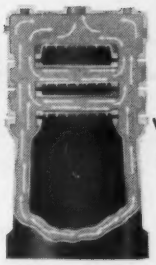
A ready-to-connect package of

WEIL-McLAIN "Extra Value" FEATURES



BALANCED FLUE TRAVEL

No dead corners in the *round* P-OB—greater combustion efficiency! Flue gas travel is *back and forth*—wiping maximum heat transfer surface before release to the chimney.



VERTICAL WATER TRAVEL

Vertical connecting water passages offer least resistance to natural upward water movement. Cool return water rapidly heats and rises to supply outlet of boiler.

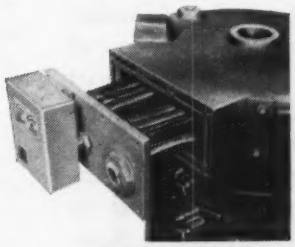
P-OB SERIES

OIL-FIRED PACKAGE BOILER

This is the package boiler that actually *costs less to install!* If you will check the *installed* cost of a Weil-McLain P-OB Boiler against that of assembling an ordinary boiler from scratch, you'll find that labor savings more than make up the difference in boiler price.

The P-OB includes everything for quick installation in a forced hot water system... fully wired, insulated, jacketed and shipped in a sturdy crate. All parts are carefully selected for quality.

Remember, too, that the Weil-McLain P-OB is a *cast iron* boiler—assurance of long life and minimum maintenance.



AMPLE DOMESTIC HOT WATER

Provision is made for either a storage type or tankless water heater. New quick acting control regulates temperature of water for domestic use as well as the heating system.

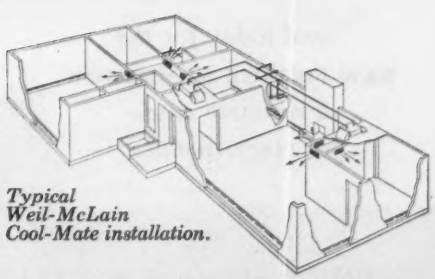
FINNED FLUE PASSAGES

All of the flueways in the P-OB are lined with deep waterbacked fins which assure the maximum heat transfer so important with oil firing.

New Weil-McLain *Cool-Mate* summer cooling system

This practical and economical method of summer cooling makes no compromise with the comforts of radiant heating. Cool-Mate Systems can be installed in new or old buildings with hot water or steam heat.

Cooled water from a Weil-McLain Chiller is circulated through a separate piping system to one or more Weil-McLain Fan Coil Units. With little or no duct work, cooled, de-humidified air is distributed through high wall grilles to the areas to be cooled. Capacities—2 and 3 HP. Send for literature.



Typical Weil-McLain Cool-Mate installation.

WEIL-McLAIN BOILERS · RADIATORS

WEIL-McLAIN COMPANY

MICHIGAN CITY, INDIANA

Address literature requests to Dept. B-96

CONVERSION JOB *Tips*

Don't Forget to Sell

Clean Heat

Odorless Heat

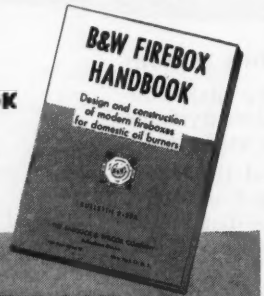
Your prospect may be thoroughly sold on the economy of oil heating. But you still can lose the sale if he has the idea rattling around in his mind that oil means a lot of soot and odor.

And it doesn't, of course. With lightweight refractories you can deliver *clean* heat, *odorless* heat that will please the fussiest prospect and, even more importantly, his wife.

What does light weight have to do with it? Plenty! Insulating firebrick are light in weight because they contain millions of tiny, insulating air cells. These air cells stop the flow of heat through the brick—the heat is bounced back into the firebox. On start-up, the hot face of lightweight refractories come up to operating temperature in a fraction of the time it takes to heat ordinary firebrick. And by keeping the heat inside the combustion chamber flame temperatures are higher during firing. Combustion is therefore more complete, eliminating soot and odors.

B&W Insulating Firebrick are the lightest weight refractories of their kind . . . for the cleanest, most odor-free oil heat. And their higher thermal efficiency, due to light weight, saves your customers as much as 25% on fuel.

Send today for the
B&W FIREBOX HANDBOOK
a valuable guide for every installer



THE BABCOCK & WILCOX CO.
REFRACTORIES DIVISION
General Offices: 161 East 42nd St., New York 17, N.Y.
Works: Augusta, Ga.

All steel cargo Enclosures designed for McCabe-Powers service Bodies

CANOPY TOP, an all-steel cargo enclosure, has been designed for the McCabe-Powers Service-Master All-Purpose ½, ¾, 1 and 1¼ ton service bodies.

The top, offered as an optional in the company's line of Service Master bodies and available for installation on bodies now in use, is 24" high, providing a 53" floor-to-roof height when bolted to compartment tops on each side of body. Strap-hinged double rear doors are equipped with a two-point rod lock. A 10" x 15" window is installed in each door and in head panel, and two full-length shelves are furnished on each side.

Made by: Service-Master Division, McCabe-Powers Auto Body Co., 5900 North Broadway, St. Louis 15, Mo.

Circle E15 on coupon, page 170

Eureka Williams Air-O-Matic central Airconditioners quickly installed

FOR INSTALLATION in any forced air system, Air-O-Matic remote aircooled central airconditioners are available in 2-, 3- and 5-ton models. The horizontal duct unit comes complete with its own blowers and filters.

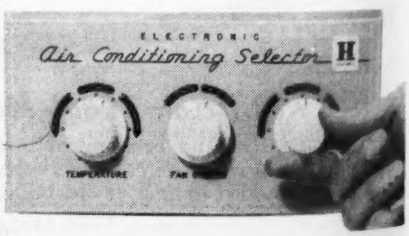
A simple by-pass duct and damper makes two completely separate systems—one for heating, the other for cooling. The remote aircooled compressor condenser can be installed quickly on any non-sinking base. Complete installation of both units usually requires less than one day.

Made by: Williams Division, Eureka Williams Corp., Bloomington, Ill.

Circle E16 on coupon, page 170

M-H Panel puts customer Comfort at Fingertips of store Manager

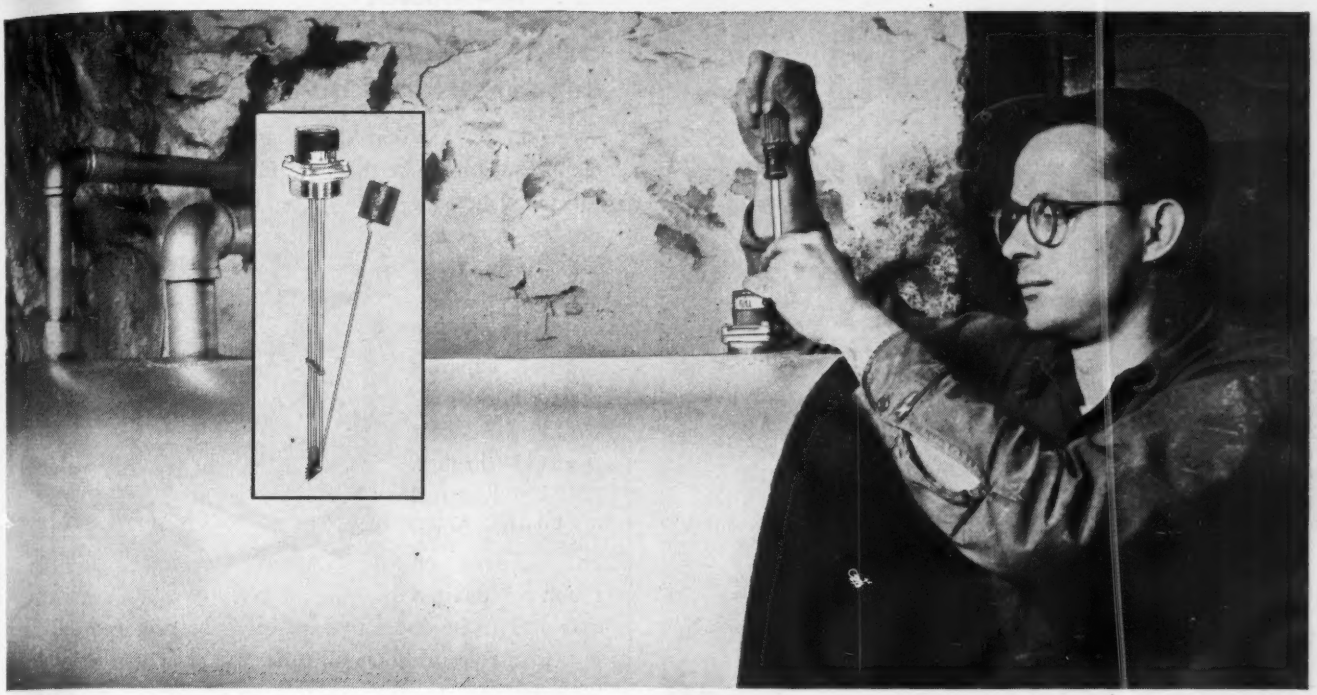
FINGERTIP CONTROL of customer comfort is provided by a new electronic "Air Conditioning Selector Panel" developed by Minneapolis-Honeywell for offices, small department stores, drug stores or super-markets.



Designed for flush-mounting on a wall within arm's reach of the manager's desk, the plexiglass panel contains dials that give fingertip electronic control over the temperature of the store, permit raising or lowering of outdoor air for ventilation, and provide for manual or automatic fan operation or shutoff.

Made by: Minneapolis-Honeywell Regulator Co., Minneapolis 8, Minn.

Circle E17 on coupon, page 170



"We've used Rochester Tank Gauges exclusively for over 10 years"

So says G. Norman Miller, Vice President of Langie Fuel Service, Inc.—a leading Rochester firm that installs hundreds of oil burners every year in addition to delivering millions of gallons of fuel.

"We have found that the man who can quickly tell just where he stands on fuel supply is a happier owner of our installation and a satisfied fuel oil customer. We never have complaints caused by faulty gauges worrying customers about running out of oil, or showing less than FULL, right after a delivery—and we are never bothered by servicing or gauge replacement problems either. All in all, we have found that by installing the Rochester Tank Gauge in combination with a standard fill signal, we get the most practical, foolproof set-up at the lowest cost."

The Universal Tank Gauge, used by Mr. Miller's firm, is but one of many dependable RMC instruments serving the petroleum industry "from well to burner."

Look to RMC for Full-Line Instrumentation

PRESSURE GAUGES

Illustrated is a 2" dial pressure gauge, heavy-duty type, for indicating pressures up to 400 lbs. What is your pressure gauge problem?

THERMOMETERS

Illustrated here is a 2" dial stack thermometer with hermetically sealed dial chamber built for heavy duty service. What are your thermometer requirements?

TELL US YOUR REQUIREMENTS FOR DIRECT MOUNTING AND REMOTE INDICATING INSTRUMENTS, AND LET RMC ENGINEERING SKILL PROVIDE THE ANSWERS!

Write today, outlining your particular need or problem.

RMC

"You Can Rely On Rochester"

LIQUID LEVEL, TEMPERATURE and PRESSURE INSTRUMENTS

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Since 1890...
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BRASS WORKS
performance
proved!
For 66 years Rockford Brass Works has been supplying valves and ground key work through leading wholesalers to contractors and dealers . . . for lasting performance you can depend on Rockford products . . .
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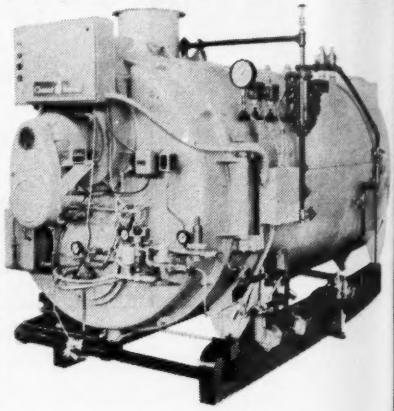
of the new valve
catalog
ROCKFORD BRASS WORKS
ROCKFORD, ILLINOIS

Greater plenum Area in new CB Boiler deadens Noise, gives quiet Operation

A CASELESS FAN that draws combustion air into a large plenum chamber in the new Cleaver-Brooks 200 hp self-contained boiler results in exceptionally quiet operation.



The new boiler, which expands the CB line to include 12 sizes from 15 through 200 hp, has full modulating burner, silent oil pump, davited rear and front doors to expedite tube removal and cleaning. Controls program all burner and accessory functions from light-off to shut down with safety. Doors are sealed with preformed asbestos gaskets. Combustion air passes through the front head and keeps the burner and control panel cool.

The totally enclosed control panel, located at operator level, contains burner relay, blower motor starter and control switches. An assembly containing both the electric and steam preheater is encased in a single shell.

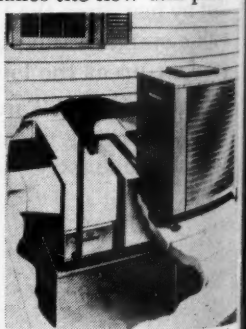
Offered in the following series: Series 100, light oil; Series 200, No. 2 oil and gas; Series 400, No. 6 oil and gas; Series 600, No. 6 oil, and Series 700, gas.

Made by: Cleaver-Brooks Co., 326 East Keefe Ave., Milwaukee 12, Wisc.

Circle E18 on coupon, page 170

Westinghouse waterless Airconditioner practical for water-scarce Sections

AN AIR-COOLED CONDENSER in the new Westinghouse waterless airconditioner, ACU, makes the new unit practical for areas where summer water shortages exist or where water rates are high.



The ACU consists of a large capacity, multi-row condenser coil, a double-inlet centrifugal fan, and a fan motor-and-drive assembled within a weatherized metal cabinet. The same unit, without compressor, called a CAC, may be used to convert existing airconditioning units from water to air-cooling.

An exclusive feature of the air-cooled condenser is vertical air discharge, taking advantage of warm air's natural tendency to rise.

Both the ACU airconditioner and the CAC air-cooled condenser come in 2-, 3- and 5-ton capacities.

Made by: Westinghouse Electric Corp., Pittsburgh, Pa.

Circle E19 on coupon, page 170

BURROUGHS SENSIMATIC accounting machine

POSTS ALL THIS fuel accounting data AUTOMATICALLY!

A very special and specific need in fuel-business accounting is answered by the Burroughs Sensimatic Accounting Machine. For example, both Degree-Day Delivery Records and Accounts Receivable are automatically posted in one operation by the versatile Sensimatic. Your operator touches the keys only once for each kind of entry (type of fuel, quantity delivered, invoice number and charge). The figures print automatically in the proper position on the Degree-Day Record, Customer Ledger, and Statement.

Multiple charges may be posted in the same run, the Sensimatic automatically extending and printing the balances—and in addition, accumulating them for proof of accuracy. The information from the Degree-Day Record and the Current Day Chart is indexed on the Sensimatic; the next delivery degree day is automatically computed and printed!

Our representative will show you many variations of these systems to fit your particular needs. Whichever system you adopt, Sensimatic's ease and speed of operation, accuracy and economy, will provide you with up-to-the-minute records for profitmaking decisions! Phone our local office for a demonstration, or write direct to Burroughs Corporation, Detroit 32, Michigan.

"Burroughs" and "Sensimatic" are trade-marks

See the new Oil Heat Institute film "Break Through for Profit!" Call our branch office for full information.

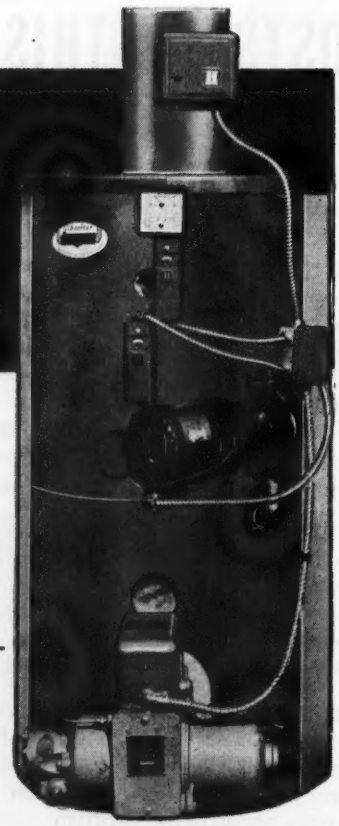
WHEREVER THERE'S BUSINESS THERE'S **Burroughs**

FOR YOUR
PACKAGED NEEDS

FOR THE HEAT
OF YOUR LIFE

Gibraltar

OIL
FIRED
PACKAGED
UNITS

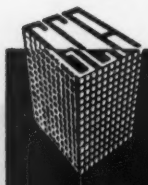


Completely assembled.

Minneapolis-Honeywell controls.

Residential heating at its peak—efficiency, economy, simplicity of installation—largest volume boiler water capacity for efficient domestic hot water and heat.

All boilers are A.S.M.E. constructed.



Gibraltar
CORPORATION OF AMERICA
223 N. NINTH ST. · BROOKLYN 11, N. Y.

"Brown Bayce Heet Twins" Baseboard accepts both 1-inch, ¾-inch Tube

ENABLING wholesalers and contractors to cut their inventories in half is a new baseboard cover called "The Brown Bayce Heet Twins" which accepts both 1" and ¾" tube.

Other features of the cover provide greater efficiency for the user, plus easier installation. It is styled to complement either period or modern decor.

Made by: A. Brown Products Corp., 97-12 Metropolitan Ave., Forest Hills, L. I., N. Y.

Circle E20 on coupon, page 170

Seamless dust Can, lined to prevent rusting, a feature of Kent Cleaners

A SEAMLESS DUST CAN, drawn from 18 gauge cold-rolled steel and lined with X-216 Black Plastisol to prevent rusting and pitting, is now featured on all Kent heavy duty vacuum cleaners at no extra cost.

The dust can of one piece construction with rounded bottom has a drop-bead edge around the top for added strength and protection against jamming and splitting.

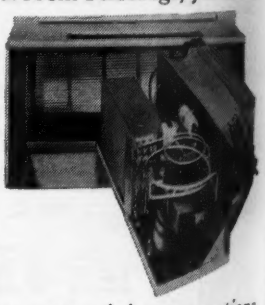
The can is easier to handle, is dent-resistant and is equally effective in wet or dry pickup.

Made by: Kent Co., Inc., 713 Canal St., Rome, N. Y.

Circle E21 on coupon, page 170

American Standard wall-hung room Unit self-contained, air-cooled Conditioner

A SELF-CONTAINED airconditioning room unit designed to simplify airconditioning in multi-room buildings, yet retain individual room control, is a wall-hung unit by the Plumbing and Heating Division, American-Standard, called Model SR Remotaire.



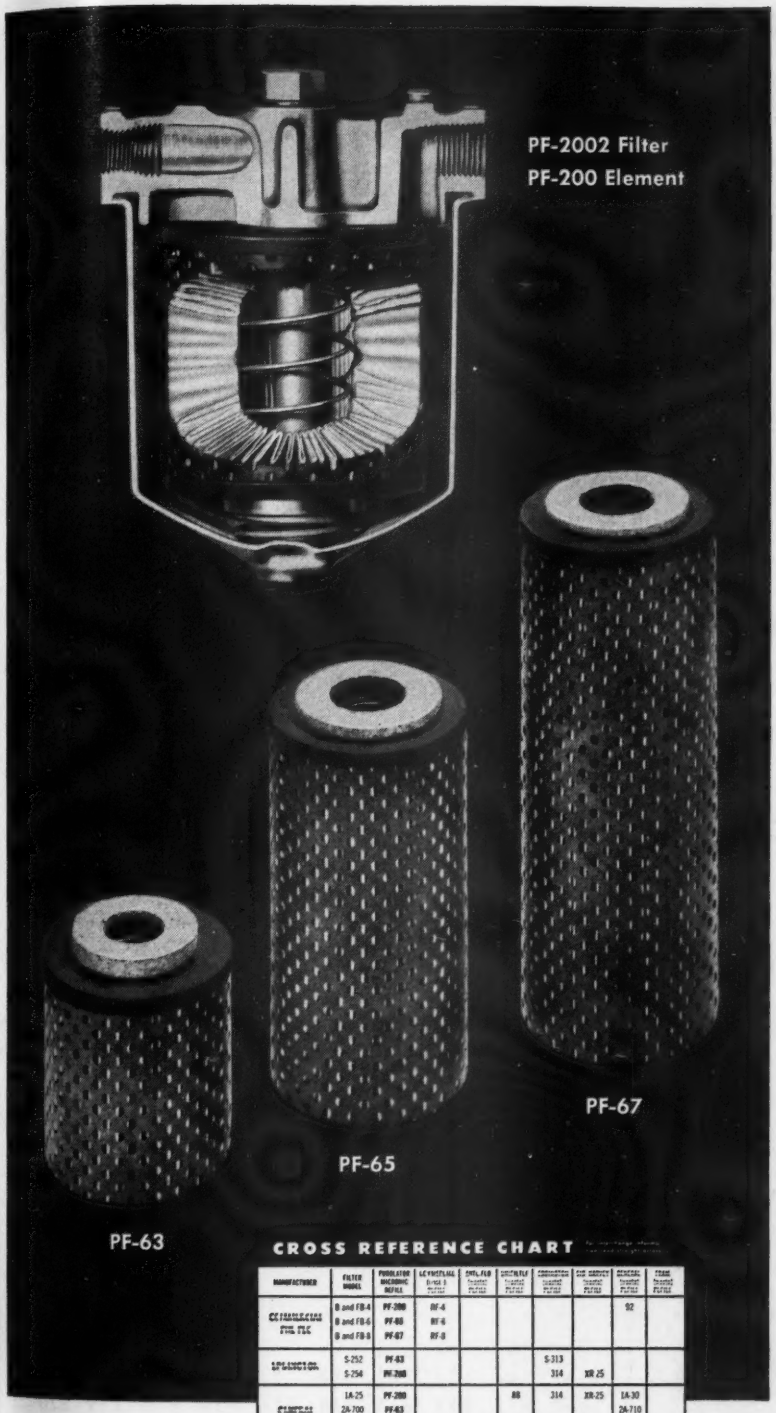
Cooling is supplied by a self-contained, air-cooled refrigeration circuit in each unit. An integral air-cooled condenser eliminates the need for water piping connections.

Heating is supplied through use of a steam or hot water coil in the unit which is easily connected to the central heating system. Conditioned air is circulated by low-speed centrifugal blowers contained in the unit. Amount of heating and cooling can be controlled manually or automatically within the individual room.

The SR Remotaire contains a sleeve, faced with an outside grille, which can be installed on the outside wall of the room flush with the wall, leaving no unsightly overhang. It is available in ¾ and 1 hp sizes.

Made by: Plumbing and Heating Division, American Radiator & Standard Sanitary Corp., Pittsburgh 30, Pa.

Circle E22 on coupon, page 170



Reduce your inventory problems...

THESE 4 PUROLATOR REFILLS SERVICE 98% OF ALL OIL BURNER FILTER INSTALLATIONS

With the addition of three new sizes, the famous PurOlator line of Micronic® filter refills (including gaskets) will now fit 98% of all oil burner installations.

In addition to supplying most requests from a minimum stock of four sizes, you can give your customers the five outstanding benefits of PurOlator Micronic filtration—*no matter what filter is installed on their job.*

1. Water and acid resistant element.
2. Uniform density filtering to .0005".
3. No channeling or "soft" spots.
4. Will not shrink, distort, stretch, flake or deteriorate.
5. A guaranteed filtering capacity of over 100 gallons per hour U.L. approved.

CROSS REFERENCE CHART

MANUFACTURER	FILTER MODEL	PUROLATOR MICRONIC REFILL	LC-VISCOLAIR E-Ref. 5 REFILL	CHEL-FLO	DELTA-FLO	COMBUSTION ENGINEERING	AIR SERVICE	GENERAL	TRANE
CENTRALAIRE FUEL FILT.	B and FB-4 B and FB-6 B and FB-8	PF-200 PF-65 PF-67	RF-4 RF-6 RF-8					92	
LOCKHEED	S-252 S-254	PF-63 PF-200				S-313 314	XR-25		
CENTRAL	1A-25 2A-700 2A-300	PF-200 PF-63			88	314	XR-25	1A-30 2A-710 2A-311	
PUROLATOR	PF-2002	PF-200						92	
LANDIS	No. 77	PF-200		CF-300	88			1A-30	
AIR MAZDLY OIL FILT.	XF-25	PF-200		CF-300		314	XR-25	1A-30	
MAGIC FIL	F-300	PF-200*		CF-300	88				
TRANE	F-1110PL	PF-200*							C-1110PL

*Gasket Ref. Included.

PUROLATOR REFILL FEATURES ... 0005 DEGREE FILTRATION • ONE SIZE FOR ANY CAPACITY • U.L. APPROVED 100 G.P.H. • FIVE TIMES MORE FILTERING SURFACE AREA

This handy guide shows you, instantly, the filter refills which may be used, interchangeably, in all leading filter units.

PUROLATOR

PRODUCTS, INC.

"FIRST IN THE FIELD OF FILTERING"

Rahway, New Jersey and Toronto, Ontario, Canada

-MAIL COUPON FOR FREE CROSS-REFERENCE CHART-

Dept. OB5-912, Purolator Products Co., Inc.
Rahway, New Jersey

Please send me _____ copies of your Oil Burner Filter Element Cross-Reference Chart.

Name_____

Address_____

City_____ Zone_____ State_____

fueloil & oilheat

Quickdraft

COMMERCIAL models for vent diameters 12, 14, 16, 18, 20, 22, 24 and 30 inches exhaust up to 877,000 CFH . . . (up to 1,800,000 CFH on special order).

THE POWER DRAFT THAT ASSURES HEATING PLANT EFFICIENCY AND SAFETY

Here's why dependence upon natural draft usually results in low operating efficiency and spilling dangerous combustion gasses into buildings. *Improved fuels* produce more heavy dioxides (CO_2 is 55% and SO_2 225% heavier than air.) *Modern heating plants* let less heat escape to keep chimneys warm.

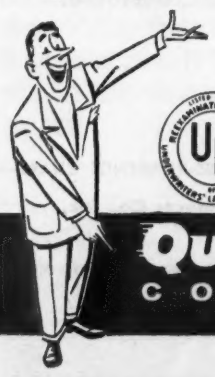
WITH OR WITHOUT CHIMNEYS, Quickdraft prevents noxious fumes and explosive gasses from escaping into buildings. It makes costly, tall chimneys unnecessary. It corrects the deficiencies of low and "cold" chimneys.

WITHOUT FANS OR MOTORS IN SMOKE-LINE, Quickdraft never obstructs exhaust line . . . even in event of power failure. Quickdraft blowers operate in clean room or outside air. Because Quickdraft eliminates down-time for cleaning and replacing fan blades, it rates high for industrial venting of abrasive and corrosive gasses.

FOR SUPPLYING AND EXHAUSTING AIR through ducts, Quickdraft doubles blower capacity.

QUICKDRAFT POWER-DRAFT UNITS provide the constant draft required for burning all fuels efficiently and economically. They keep chimneys dry and eliminate chattering, smoking and sooting. Write today for complete details and engineering data.

RESIDENTIAL models for vent diameters 4, 6, 7, 8, 9 and 10 inches exhaust up to 60,000 CFH.



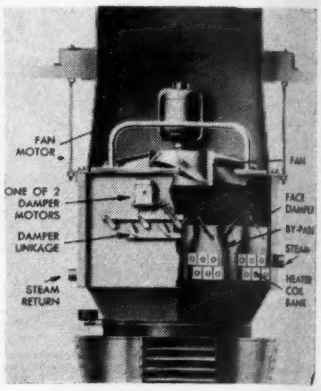
N-349-QD

Quickdraft COMPANY Canton 1, Ohio

QUICKDRAFT COMPANY
Dueber-Hampden Building
P. O. Box 87-F
Canton 1, Ohio

Wing heater Unit blends air Inflow to desired Degree

DESIGNED for the replacement of air exhausted in manufacturing processes and for workers' comfort, the Wing FAS unit heater blends air brought in through heating passages with non-heated air from by-pass passages to the desired room temperature.



The heater consists of a motor and fan, a heater section comprising alternate heating and by-pass passages and a distributing outlet. Air brought in through the heating passages passes over extended surface steam coils.

Volume control dampers on all passages, operated by synchronized damper motors, are actuated by an air stream thermostat or room thermostat.

The FAS heater is available in two types: the vertical flow type for installation in roof or ceilings of single story buildings or top floors of multi-story buildings, and the horizontal flow type for installation in windows or wall openings, multi-story buildings or low-roofed, one story buildings.

Made by: L. J. Wing Mfg. Co., New York, N. Y.

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READER SERVICE COUPON

FUELOIL & OIL HEAT READER SERVICE
2 West 45th St., New York 36
REPLY CARD SEPTEMBER ISSUE
Mail Now—Coupon Expires November 30, 1956

Circle numbers of new product items on which you want more information:

NEW PRODUCTS

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Ask These 20 Questions - - -

BEFORE YOU BUY ANY REBUILT RELAY

- - Unless the answer is YES to every one, It is not as good as a Sid Harvey rebuilt

1. Is a new Drive Shift installed?
2. Is a new Bi-metal element installed?
3. Are there new clutch fingers?
4. Does it have new line voltage contacts?
5. Is a new timing lever installed?
6. Has the "Pull in voltage" been correctly set?
7. Are the Pyrostat contacts micrometer set?
8. Are the Armature contacts gram gage set?
9. Is the Thermostat circuit ammeter set?
10. Are the low voltage contacts resurfaced?
11. Is the Armature replaced when pitted?
12. Is the safety switch rebuilt?
13. Are the solder connections good?
14. Is voltage rating clearly marked?
15. Are "pull in" coils identified?
16. Is the wiring diagram in cover?
17. Is the frame cadmium plated?
18. Is the cover "wrinkle" painted?
19. Does it have like new appearance?
20. Is it cartoned and labeled?

Sid Harvey Rebuilding Service covers, not only Relays, but Everything used on any Automatic Heating Installation.

WHEN YOU WANT IT - - WE HAVE IT!
WHEN YOU USE IT IT WORKS!

Sid Harvey's rebuilt relays answer "Yes" to every question; that's why they last longer and cost less in the long run.

Sold Only on Exchange
At All 44 Sid Harvey Stores

SID HARVEY INC.
VALLEY STREAM, NEW YORK

Readers' Problems

(Begins on page 110)

Q. We would very much appreciate your assistance in locating some references as to the history or use of oil for both domestic and industrial heating. Perhaps you can tell us when and where the first oilburner was used for either purpose.

Any information you can give us will be very much appreciated.

A. S. C., Detroit

A. Practicability and fairly widespread use are factors, as opposed to daydreaming and the production of oilburners on experimental bases. Thus arguments can arise regarding which oilburners were "first." In Detroit, you must be aware of parallel arguments regarding which was the first, practical self-propelled vehicle.

Colonel Drake struck oil in Pennsylvania in 1859. That has been much publicized as the real start of the petroleum industry, for actually it started the removal of petroleum from the earth on a large and systematic basis. Before 1859, however, even before biblical times, oil was obtained from seepages and outcroppings and used in small but interesting amounts for medicinal purposes, embalming, calking, and illumination.

Flat wicks for oilburning devices, probably intended mainly to produce light but which produced heat inevitably, appeared in models sent to the United States Patent Office in 1830, and give evidence of early efforts towards clean and efficient combustion.

The soot-reducing effect of feeding water into a flame, to produce steam and its benefits, was commonly known in Russia before 1860; the "Astrakan" burner, used in large numbers for house-heating, featured drop-by-drop gravity feed from two similar containers, one for oil and the other for water.

Spray Burners

In 1863 the spray burner invented by Brydges was introduced in America. Some authorities declare the first really practical oilburner was introduced in London in 1865 by the inventor Aydon; superheated steam accomplished or helped its atomization.

In 1886, James Holden of the Great Eastern Railway, England, designed and built relatively high-capacity locomotive oilburners. Thomas Urguhart of Russia seemingly, according to some authorities, had been having considerable success in the same field.

The Russian government had converted all vessels of the Caspian Fleet to oilfiring in 1874.

As early as 1881, the Boston and Albany Railroad Company used a locomotive converted from coal-firing to oilfiring. The Pennsylvania Railroad Company made extensive tests at the same time.

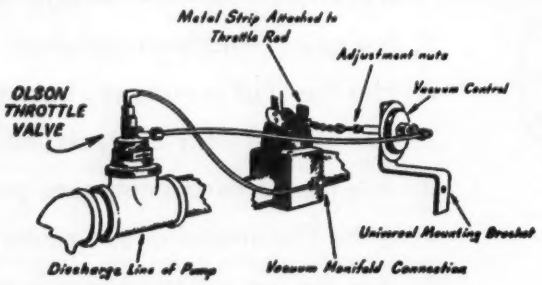
In 1875 Comm. Isherwood of the U. S. Navy studied oilfiring for naval boilers. Concluding: "Atomization is the only way!", either he invented this use of the word "atomization" or increased its use tremendously. His reference was to commercial-industrial use of oils, of course.

The Chicago Exposition management faced the problems of heating the World's Fair buildings in 1892, and decided on fueloil because it burned clean and conserved space. The oil-

NOW! IMPROVED!

OLSON THROTTLE CONTROL

Pumping Rate Now Can Be Controlled By The Driver*



The NEW IMPROVED—OLSON THROTTLE CONTROL—Automatically decreases engine speed when the nozzle is closed and automatically increases engine to pumping speed set by your driver when nozzle is open. This gives you these important savings:

- **Less wear on pump & power take-off**
- **Less wear on pump universals**
- **Less wear on truck motor & all running parts of motor**
- **Consistently saves gasoline & motor oil**
- **Saves driver's time—hand throttle not necessary**

PLUS!

YOUR DRIVER CAN SELECT ANY PUMPING SPEED

If the life of your truck is seven years, you will save:

1,260 gallons of gasoline
12,600 engine miles

*** If it is desirable to slow down the engine and pumping speed for some deliveries, due to small fill pipes or other reasons, we have available as an accessory, a control valve, that may be mounted near the meter, or other convenient place, so that driver may quickly reduce pumping speed when conditions require slower flow to tank, without affecting normal speed adjustment.**

Only $34.50 F. O. B. Raynham. • Speed control valve $3.75

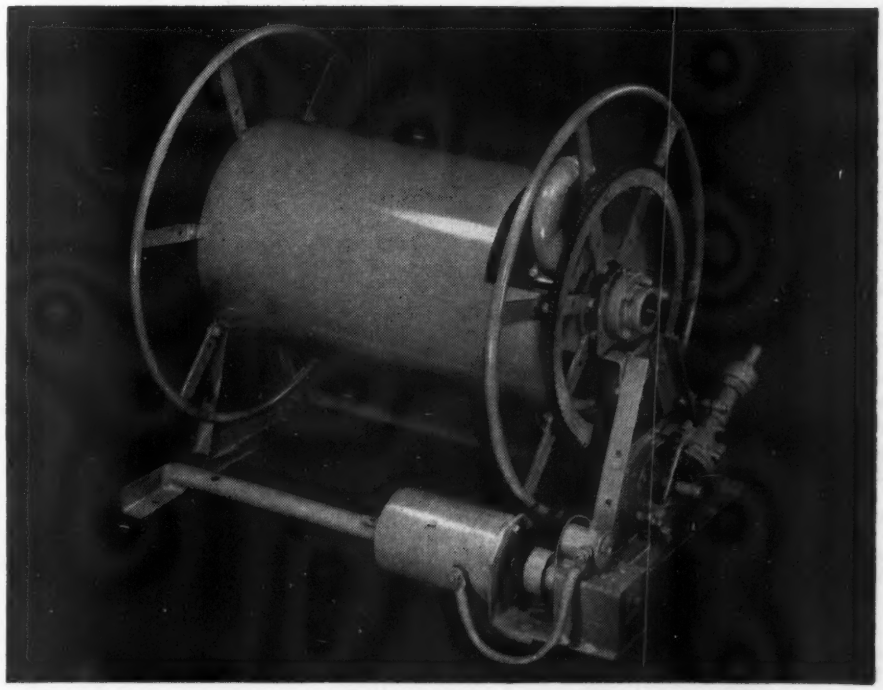
OLSON THROTTLE CONTROL

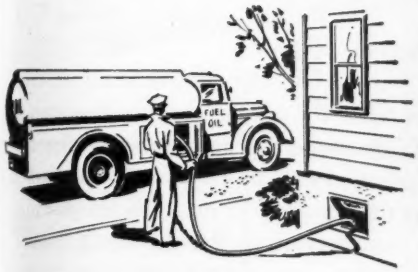
BOX 87, BROADWAY • RAYNHAM, MASS.

UNRESTRICTED FLOW

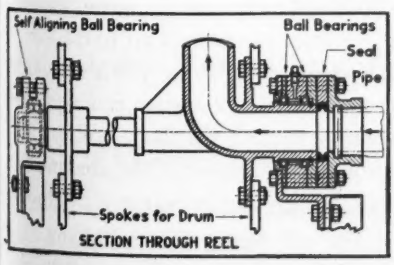
PHILADELPHIA HOSE REELS

mean fast deliveries





"Save time at the delivery point, and you save money." That is the consensus of tank truck operators everywhere, and it is one of the many advantages of Philadelphia Hose Reels.



Unrestricted passageway is clearly shown on the sectional view of the spindle and seal. Note the long radius curvature of the elbow, free from restriction. A self-tightening Neoprene seal is used. It is tight at high or low pressures and will run for many years without any signs of wear or leakage. Note that the ball bearings for the spindle are outside the passageway and not in contact with the fluid.

The actual fact is this: when a restricted flow reel is replaced with a Philadelphia Hose Reel, the resulting full flow means faster delivery—without changing either the pump or the hose.

Philadelphia Reels are light in weight and are built like a fine automobile. All parts are made of steel, malleable iron or bronze (no cast iron is used).

All shafts and bearings are equipped with ball bearings with hardened and ground races. Seven ball bearings are used on each reel. This means the reel will last many times longer than one equipped with plain bearings.

Prices No Higher. Quantity production of standard parts, plus many years of experience, enables us to build these high-grade reels at prices competitive with and in many cases lower than other makes. Philadelphia Hose Reels are made in all sizes from 1″ to 3″ with hand or power drives—electric, air or hydraulic. Underwriters' approved explosionproof motors when required (any voltage). Send for Bulletin No. 171.

PHILADELPHIA VALVE COMPANY

2497 E. ONTARIO STREET, PHILADELPHIA 34, PA.

Manufacturers of Reels & Valves since 1922

Pacific Coast Distributors:

Oil Marketing Equipment Co., 325 Fremont Street, San Francisco 5, California
Howard Supply Co., 5125 Santa Fe Avenue, Los Angeles 11, California

burning plant, including 54 boilers, became part of the exposition and influenced tremendously the engineers and other fair visitors interested in large-scale heating and in power plants. The successful demonstration, which included semi-automatic and automatic controls, gained commercial-industrial oilheating almost instant progress that advanced its use by many years.

Domestic, automatic burners appeared just before 1920; according to some authorities, earmarks of the early successful models included gas or oil pilots, and forced draft provided by fans or blower wheels. Problems of safety controls and other controls had to be solved before oilburners became practical for house-heating.

For details interesting to you, don't fail to read the classic book on domestic oilheating, "Handbook of Oil Burning," by Harry F. Tapp, published in 1931 by the American Oil Burner Association, Inc. Every Library that's technically complete should have a copy of this excellent book. Many an old-timer at oilburners has a copy—which he'll part with as readily as he would his right arm.

For additional details, try to obtain and read a copy of the book, "Oil Burning," by H. A. Romp, excellent at historical coverage, and published in 1937 by Martinus Nijhoff, The Hague, Holland.

In either book, you will obtain far more on the topic you ask about than can be given in our relatively brief reply. But you cannot succeed in answering the questions of which make-and-model was the first.

Q. To what degree is carbon monoxide gas poisoning a factor in planning and servicing oilburning house-heating installations? What is the percentage of carbon monoxide in oilburner smokepipe gases? Smokepipe waste-heat economizers and use of draft inducers with them is on my mind. Give details, please, also on gas-fired furnaces.

P. O. J., Bronx, N. Y.

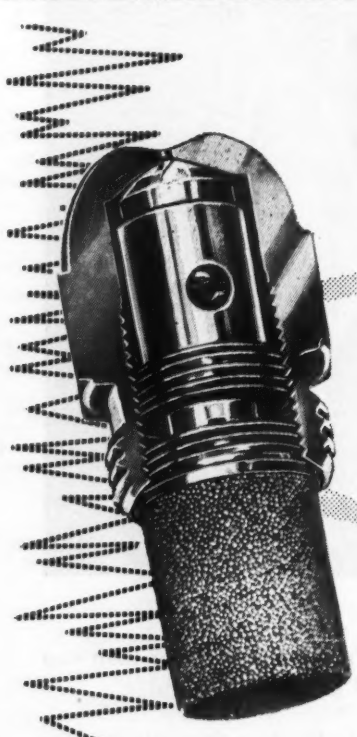
A. On typical oilburner installations, the percentage of carbon monoxide in the flue gases is zero. Therefore you have no worry about carbon monoxide poisoning when planning and servicing oilburner installations.

You may be able to purposely adjust an oil flame so poorly that its products of combustion contain a trace of carbon monoxide. But if you do this on a typical oilburner installation, the flame will also produce vast amounts of soot, smoke, and oil vapor.

To cause an oil flame of a typical oilburner to produce carbon monoxide, reduce the flow of air to the flame. Before you reach the point at which the production of carbon monoxide becomes a hazard, the flame will become intolerable because of the amounts of soot, smoke, and oil vapor it produces.

The oil flames of typical installations thus can't produce appreciable amounts of carbon monoxide without producing intolerable amounts of soot, smoke, and oil vapor.

The only thing we can say here about gas-fired furnaces is that unfortunately the above statements do not apply to them; with gas heating, the facts about monoxide poisoning are entirely different than with oil heating.



PULSATION TROUBLE?

Monarch Will Help You!

Here Is What You Need:

1. Monarch F-80-AR series 80° angle nozzle.
2. Recommended Monarch F-57 Air Cone and H-451 Stabilizer.
3. Solenoid shut-off Valve for nozzle line.

NOZZLES
CONES
STABILIZERS
COMBUSTION HEADS

DEALERS: *Buy from your Monarch jobber*

Write for Catalog "O"

Set the Monarch equipment according to catalog "O" recommendations and see results. These are proven combinations used for years in thousands of installations. They positively minimize if not completely cure ordinary running pulsation in small highly restricted units.

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PHILADELPHIA 34, PA.
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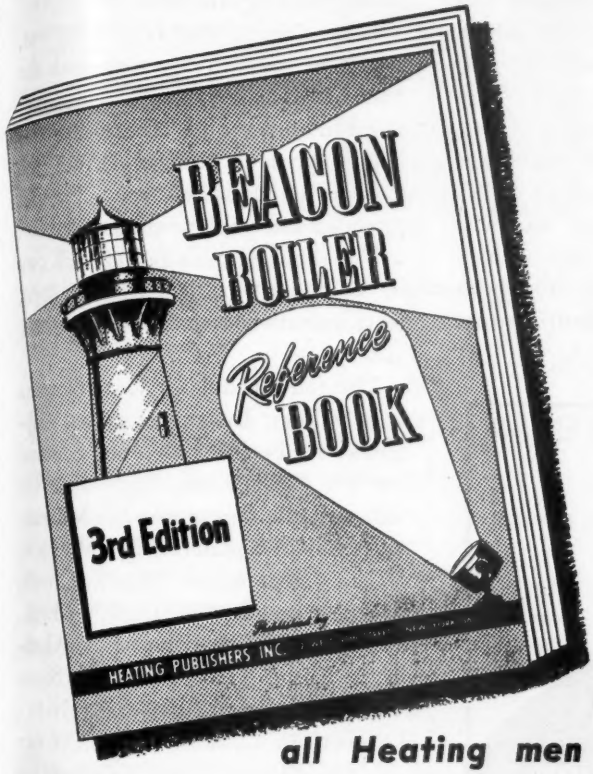
E. S. Gallagher Sales Ltd., Toronto 12, Canada

You Can Save Time and Money



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11,000 HEATING BOILERS

This new Third Edition contains much more data than the second edition which was published many years ago. The size is 8¼ x 11¼ — very handy and convenient, it contains more than 200 pages and carries ratings on domestic heating boilers up to 3,000 sq. feet of steam and equivalent Hot Water.

All ratings are taken from the Manufacturer's own statements of specifications and technical information.

Heating Contractors and all persons engaged in installation of Boilers, including Dealers, Salesmen, Estimators and Service men, have highly endorsed the accuracy of information and stated how much help they derived from the contents of Beacon Boiler Reference Book.

We are holding the price down to $4.00 a copy, in spite of mounting costs of printing, paper, publishing and other costs.

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Penn Controlorama starts fall Tour in Indianapolis Sept. 13

CONTROLORAMA, the elaborate educational road show on automatic controls for heating, airconditioning and refrigeration sponsored by Penn Controls, Inc., Goshen, Ind., will premiere its fall tour in Indianapolis, Ind., September 13 preparatory to showing in 16 midwestern cities by October 22.

Controlorama is a modernized and completely new successor to earlier control shows which Penn first pioneered in 1936. More emphasis is given to the rapidly expanding airconditioning market. Biggest single feature of the show is the use of "live" heating, refrigeration and airconditioning systems operating panels which simulate actual operating conditions under various types of control situations. Wide screen color projection is used to supplement the story of automatic control, animated charts and giant operating controls.

Controlorama starts at 5:30 PM, local time, in each city with both the heating and cooling presentations combined in one evening. The audience is Penn's guest at dinner before the showing and additional refreshment is provided after the program.

The show is sponsored in each city by leading wholesalers who, in turn, issue invitations to trade people in the area.

The fall schedule of Controlorama is as follows: Indianapolis, Ind., September 13; Fort Wayne, Ind., September 17; Chicago, Ill., September 19; Chicago, Ill., September 20; Milwaukee, Wisc., September 24; Madison, Wisc., September 25; LaCrosse, Wisc., September 27; Duluth, Minn., October 1; Minneapolis, Minn., October 3; Fargo, N. D., October 5; Sioux City, Iowa, October 8; Omaha, Nebr., October 10; Lincoln, Nebr., October 11; Des Moines, Iowa, October 15; Cedar Rapids, Iowa, October 17; Davenport, Iowa, October 18, and Peoria, Ill., October 22.

There are no hidden contacts in Mercoid Controls—You can tell at a glance whether switch circuit is "ON" or "OFF"

MERCOID PYRATHERM®
SAFETY AND IGNITION CONTROL

Visible "On-Off" Sealed Mercury Contacts
ELIMINATE GUESSWORK

1. SAFETY SWITCH
2. IGNITION SWITCH
3. MOTOR SWITCH

Mercoid Pyratherm provides

Low line voltage protection
Power failure protection
Protection against flame or ignition failure
Built-in low voltage thermostat circuit
Positive ignition circuit control

FOR INTERMITTENT OR CONSTANT IGNITION BURNERS

THE MERCOID CORPORATION
4219 BELMONT AVENUE • CHICAGO 41, ILLINOIS

Dunham designs Demonstrator to illustrate heating System

A DEMONSTRATION UNIT has been designed by C. A. Dunham Co., Chicago, to illustrate the company's VARI-AIR system for schools and public buildings.

The unit, as shown in the picture, has every feature of an actual installation reduced in size. The unit is mounted on the floor, showing a plenum below.

Working controls, architectural

✓ FEWER EMERGENCY CALLS FOR YOU

RENEW FILTER Signal warns in advance of furnace troubles developing from dirt-clogged air filters—eliminates the most common cause of service complaints.

✓ BETTER HEATING FOR YOUR CUSTOMERS

RENEW FILTER Signal tells when it's time to replace dirty filters—guarantees clean, comfortable heat at all times; worthwhile savings on fuel and cleaning bills; protection against furnace damage.

Bacharach FILTER GAUGE

Fits all types of heating and cooling units.

Accurately adjustable for any kind of replaceable or washable filter.

Easy to install. Drill 4 holes and mount—no connection across filter—no electrical connections.

Suggested Retail Price, $6.35 plus installation charge.

ASK YOUR JOBBER OR WRITE FOR LEAFLET FG

BACHARACH INDUSTRIAL INSTRUMENT CO.

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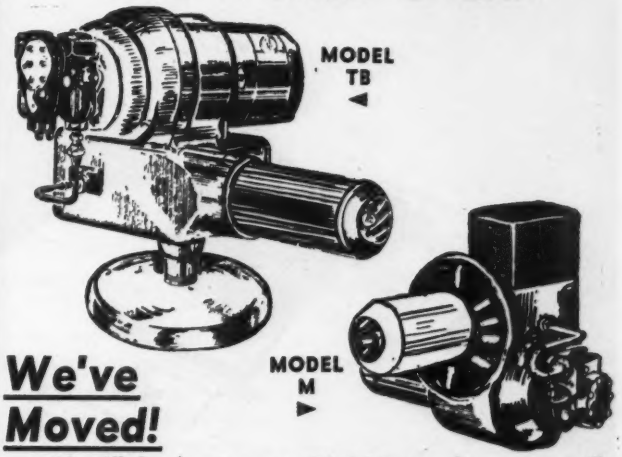
Silent-Flame

KNOWN AND USED THE WORLD OVER!



We've Moved!

You'll find our new 20,000 sq. ft. plant will mean Continued High Quality Products, and Better Service for You!

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Canadian Distributor: Premier Heating Appliances Co. 65 Mozart, E., Montreal, Can.

the Good Old Days?

toying around

Next was costly equipment
In the "Expert's" cleaning scheme.
And the fact that it was costly
Was "proof that it would clean."

Gears and pulleys hummed and hissed.
The "Expert" said, "I have it!"
Soot remained, but he had a ball
Playing with the gadget.

To be sure of heating efficiency, use

"CLEAN RIGHT" SOOT REMOVER

NON-CORROSIVE NON-EXPLOSIVE
LEAVES NO RESIDUE

Always look for the broom on the package.

MILLER PRODUCT CO.

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COMBUSTION CHAMBERS

Tough

. . . and flawless!

GEM Combustion Chambers are die formed from hi-grade lightweight insulating materials and then kiln-fired to withstand 2300° F temperatures . . . that's why they're "tough" and give years of "flawless" performance. GEM's construction guarantees high combustion efficiency and excellent performance with high or low pressure burners.

The universal design of GEM Chambers enables fast and easy installations in any boiler or furnace. The scientific "float packaging" used assures maximum protection from breakage. Enjoy GEM's many advantages on your jobs—Write Today!

Special designs to meet furnace and boiler manufacturers specifications are our specialty. Inquiries are invited for prompt free estimates.

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Mfg's. of RADIANTS • BACKWALLS • STOVE LINERS
COMBUSTION CHAMBERS • INSULATING BRICK • ELEMENTS

drawings of a typical VARI-AIR installation and literature are on the right hand panel. There are two of these demonstration units, and each will be on tour for several months covering every section of the country.

General Controls announces six new sales Appointments

THE APPOINTMENT of Stanley John Pachyn as assistant sales manager of the Industrial Controls Division, General Controls Co., was one of six appointments recently announced. Pachyn will be located at General Controls Eastern manufacturing plant in Skokie, Ill.

John W. Babcock, former manager of General Controls Tulsa branch, has been named manager of the New Orleans factory branch office.

John Sensenig, Jr., will be regional representative for the airconditioning and refrigeration controls division, with headquarters at the General Controls factory branch in Dallas, Texas.

New field representatives are John A. Mitchell, for the Chicago factory branch; John B. Hurd, for the Columbus factory branch, and Henry L. Bryne, for the Industrial Controls Division, with headquarters at the Philadelphia branch.

Beauty conditioning *kit by Lennox Industries Inc. is a complete package of promotional materials intended for builders who want a powerful airconditioning tie-in campaign with the new "Beauty Conditioned Home" promotion started by Lennox with an ad in the July 9 issue of Life. The kit covers all phases of model-home promotion—planning, budgeting, advertising, publicity, preview, grand opening and follow-up—with Lennox guidance and production assistance.*

GM Delco Appliance Division instructs Dealers in Service

A NEW SERIES of dealer service instruction meetings is being held by the Delco Appliance Division of General Motors at General Motors Training

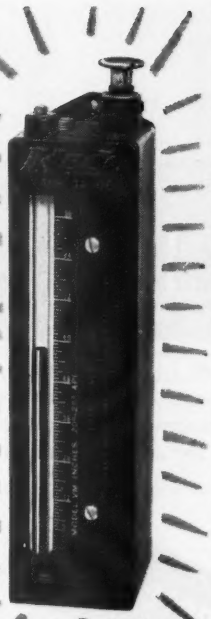
More than a Recap!
. . . that's what you get with
HAWKINSON TREADS
Because
A TREAD TO SUIT YOUR NEEDS
• RUN COOLER • LAST LONGER
• GIVE BETTER TRACTION
• BETTER PERFORMANCE
CURED THE WAY THEY RUN
AUTHORIZED HAWKINSON TIRE TREAD SERVICE
TRADE MARK REG. U. S. PAT. OFF.
Authorized HAWKINSON TREAD Service
In Principal Cities U. S. A., Canada and Foreign Countries
Minneapolis • PAUL E. HAWKINSON CO. • Minnesota

new!

KECO

Remote-Reading **TANK GAUGE**

For Oil and Gasoline



- Versatile!
- Attractively Priced!
- Economical to Handle!
- Minimum Dealer Inventory!

FREE BULLETIN shows why the Keco gauge is a natural for users, distributors and dealers alike. Write Today!

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Box 410 • Ann Arbor, Mich.

MANUFACTURERS OF GAUGING EQUIPMENT FOR OVER 30 YEARS

QUICKLY... EASILY... AND *ECONOMICALLY* CONVERT YOUR "PICK-UP" TO A MODERN *SERVICE* TRUCK!

Mount Stahl Utility Side Boxes on any make or model of pick-up truck. All-steel, welded, furnished complete with mounting brackets, bolts and instructions. Keep your tools dry, safe, organized. Thousands of pairs in use. *Write today for Literature and Name of Nearest Distributor.*

STAHL—BUILDER OF UTILITY BODIES FOR THE NATION'S BEST-KNOWN UTILITIES.

Att: FUEL OIL DEALERS

WE CAN HANDLE your TRAINING PROBLEMS

Combination HOME STUDY and RESIDENT SHOP TRAINING COURSES available

- **FOR THE TRAINEE**

"Domestic Oil Burner Servicing"

Covers installation, maintenance, controls and control circuits.

- **FOR THE SERVICEMAN**

"Advanced Oil Burner Servicing"

Covers basic electricity, oil burner controls, combustion problems and their solution, adjusting for higher efficiency, heat loss and design of systems.

WRITE TODAY for FREE INFORMATION

"Training Thousands since 1936"

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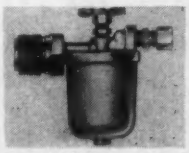
SETTE

Microstone® Element FILTERS

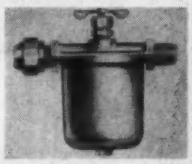
Sell

...the most effective fuel oil filter yet devised! SETTE Microstone Element Filters boost oil burning efficiency for all units. Exclusive ceramic element stops all particles down to 1/10,000 of an inch! Give your customers *proved economy!*

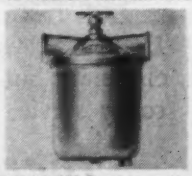
Call your jobber—or order direct



Model F-10B: Saves costs for small to medium ranges, heaters, furnaces, etc.—installs on tank or drum.



Model Z-1: Screws easily into *all* control valves...small to medium installations.



Model MS-3: Unequalled filtration for medium to large units; will handle 100,000 BTU's. Easily installed at tank or anywhere in line.

SETTE PRODUCTS COMPANY

1241 High Street

Oakland 1, Calif.

Please send the following, postpaid:

____doz. Model F-10B Filters ____doz. Model Z-1 Filters ____doz. Model MS-3 Filters

Name

Address

City State

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Centers throughout the country.

Factory-trained experts under the supervision of Richard R. Reddington, general service manager, of Delco Appliance, conduct the meetings which are designed to provide Delco-Heat dealers with the latest and most modern service techniques.

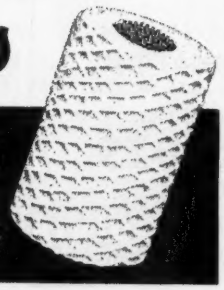
The GM Training Centers offer the ultimate in training facilities. Space is provided for actual on the spot working demonstrations. There are facilities for the use of training films, film strips and visual aids of all kinds.

Brand new building *at 12085 Dixie St., Detroit, Mich., now houses offices and plant of Auto-flo Corp., manufacturers of humidifiers and oil filters. Modern facilities increase efficiency in production and shipping. Move was made to meet expanding demand for Auto-flo products*

That's because superior quality and superior performance eliminate burner trouble due to oil impurities . . . minimize costly service calls . . . assure customer satisfaction.

Increase your profits with

Fulflo Filters



COMMERCIAL FILTERS
CORPORATION
Melrose 76, Massachusetts

Airconditioning Film circulated by Airtemp

"IT'S IN THE AIR" is a 16-mm color motion picture film made available to schools, churches, clubs and other groups by the Airtemp Division, Chrysler Corp., Dayton, O.

The non-commercial film shows in an entertaining and non-technical manner a number of facts about the earth's atmosphere. It points out how man, through the use of airconditioning equipment can control his environment for comfort and health.

The movie has been exhibited extensively for the past two years, and has now been completely modernized with 1956 equipment.

The film can be reserved for free showings by contacting Modern Talking Picture Service, Inc., or reservations can be made through local Airtemp equipment outlets.

Dealers brush up service Techniques at Conco school

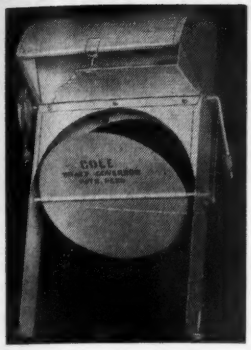
ONE HUNDRED heating and airconditioning dealers and servicemen attended the four April service schools of Conco Engineering Works at its factory classroom in Mendota, Ill.

Attending the series of three-day courses in groups of 25, the "students" were briefed by company executives on sales, advertising, research and other company policies applying to the 1956 Conco line. Workshop periods in which they performed typical service operation on new Conco equipment were supplemented with lectures covering the latest servicing wrinkles and maintenance techniques.

Low Cost COLE-SEWELL

DRAFT CONTROLS

Outlast. Outperform Others



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A simple, positive, easy to install, fully automatic and approved control for oil burners. Permits no loss of heated air from building. No excessive cooling of chimney. Seven domestic sizes from 6" to 12" . . . Both square and round industrial models in all sizes.

DRAFT KOREKTOR

Long famous for fuel economy with domestic space heaters. Close fitting counterbalanced blade prevents leakage and stays closed until draft reaches ideal minimum. Sensitive, finger-tip outside adjustment. Many other important features. Domestic models in 4"—5"—6" sizes. Industrial models 14" up.

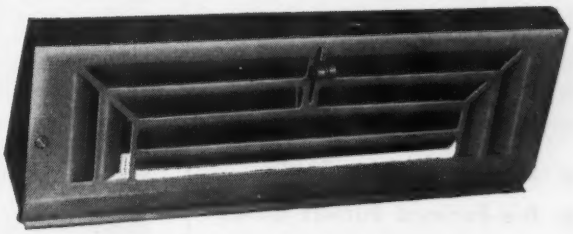
ASK YOUR JOBBER OR WRITE

COLE-SEWELL ENGINEERING CO.

2288 UNIVERSITY AVE., ST. PAUL 14, MINN.

MODEL MB-MERCO BASE DIFFUSOR

Perimeter diffusor for continuous baseboard type installation



MODEL 100-TRU-FUSION DIFFUSOR

16" and 30" with shutters

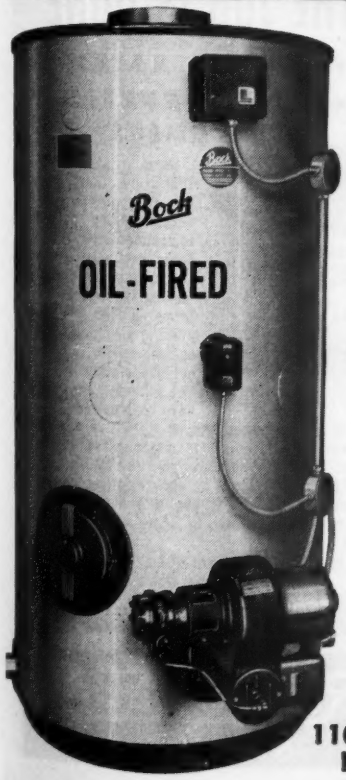
High Efficiency Baseboard Type out-of-wall For heating and cooling. With exclusive features of greater free area and uniform temperatures.

Besides Diffuser Type registers the National Line includes all types and sizes of registers and grilles. **Write for Catalog.**

National GRILLE AND REGISTER CO.

3169 East 80th Street Cleveland 4, Ohio

Big WATER HEATERS



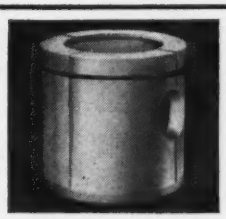
- FOR the larger jobs where fast recovery plus storage are required. Handles a battery of showers with a single heater near the point of use. Save hundreds of dollars in tanks, pipe, and fittings.
- USED in schools, dormitories, apartments, motels, camps, etc. Supplies medium or high temperature water. Available with standard or A.S.M.E. tank. Oil or gas fired.

BOCK CORP.

110 S. DICKINSON ST.
MADISON 4, WIS.

for FASTER . . . MORE PROFITABLE

repairs to any furnace



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DOMESTIC REFRACTORIES

For replacing, choose lightweight INSUL-LYTE chambers. Economical, easy to install. For repairing worn chambers, firepots, patching brickwork, forming hearths . . . use FIRELINE products. Fireline is plastic: mold it to any contour. Super-Hearth, Firelite and Firehearth are castable, easily poured or trowelled into place. All form one-piece linings — no joints where spalling can occur. Ask your Insul-Lyte representative—or call or write for catalog.

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Triangle is NOW

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- ★ **Double Bottom Shells**
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- ★ **Compactness**

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Get dependable EQUIPMENT

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P&M SERVICE

Complete Equipment for the Oil Trade

Gilded scale model *of the new Grant Wilson "Jet-line" combustion chamber is presented by L. E. Harnisch, left, manager of operations, to R. W. Weaver, sales manager. The new line lists a complete range of 15 sizes from 0.60 gph to 12.0 gph in both the flame conforming "pear" shape and the conventional "round" shape. Pre-cast refractory has added impact resistance. Grant Wilson "air-cushion" packaging assures safe arrival on job.*

Replacing Nozzles is cheaper than cleaning, Booklet shows

A BOOKLET announced by Delavan Mfg. Co., West Des Moines, Iowa, for the oilburner industry, particularly servicing dealers, shows why changing nozzles rather than trying to clean them saves the average oilburner dealer 47¢ per call.

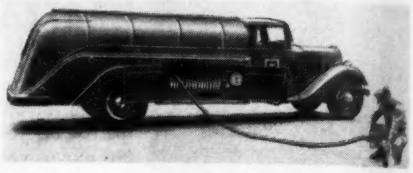
Entitled, "This is Your Strife," the booklet is done in cartoon style. It also includes oilburner servicing tips which apply particularly to nozzle service on the job. Free copies are available by writing to Delavan.

New Heating-Cooling Supply Co., Armstrong Wholesaler

IN ORDER to give heating and airconditioning dealers top quality service, Standard Plumbing Supply Co., Minneapolis, Minn., has set up a new division to handle only heating and airconditioning equipment. The new division, which employs 27 persons in office, warehouse and sales department, is an exclusive Armstrong Furnace Co. wholesaler in Minnesota and part of Wisconsin in the heating and airconditioning line.

SAVE

ON FUEL OIL DELIVERY HOSE



Top-quality hose racks and reels so easily . . . takes hard wear so ruggedly . . . it's been ordered and repeat-ordered for years by thousands of careful purchasers. Flexible. Multiple-braid carcass. Static wire inserted. Furnished with full-flow male & female couplings (unless male & male specified). SATISFACTION GUARANTEED, or you may return hose on receipt for full refund. (That's how sure we are you won't).

Check low prices—send order now for immediate delivery from stock

Lengths	1" I. D.	1¼" I. D.
50 ft.	$29.70	$48.05
75 ft.	42.70	69.80
100 ft.	55.70	91.55
125 ft.	68.70	113.30

Freight prepaid on orders of $100 or more
Terms: 2%—10 days to rated firms. Otherwise C.O.D.

CARLYLE RUBBER CO., Inc.
103-05 Warren St., New York 7, N. Y.
Request complete literature Digby 9-3810

SEAL WITH RECTORSEAL No. 2 and THE JOB IS DONE

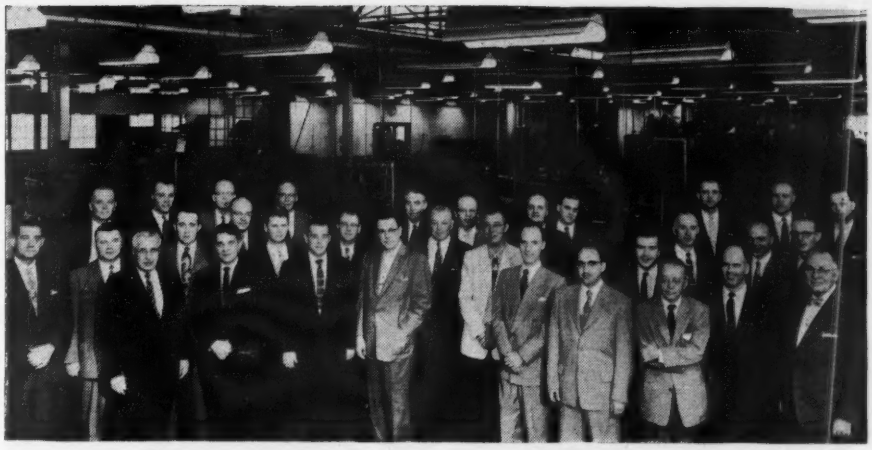
- ***NO CALL BACKS***
- ***NO DISGRUNTLED CUSTOMERS***

Seal it and forget it. That's the true story of fuel-oil connections when Rectorseal No. 2 is the compound used. There's never any costly maintenance problem due to leaking. Rectorseal No. 2 forms a positive leak-proof connection even against jarring, vibration, or temperature changes. Yet, joints are always easy to break-out. Clean, easy-to-use Rectorseal No. 2 is thin in the can—thickens in the joint for maximum sealing efficiency. With this superior performance Rectorseal goes farther because of its smooth consistency—actually costs less to use. Why not give Rectorseal No. 2 a chance to show you the sealing job it can do.

Write for a generous Free Sample of Rectorseal No. 2.

RECTORSEAL, Dept. O
2215 Commerce Street, Houston 2, Texas

RECTORSEAL NUMBER TWO



Members *of the "Doing one thing Well" organization — designation of McDonnell & Miller, Inc., for its work force of full-time district managers and men who supervise sales and service of McDonnell products—attended a recent four-day meeting at the company's plant in Chicago.*

New Additions raise Total of Sid Harvey Stores to 44

ADDITION of two new branch stores, rebuilding of a third and construction of three new headquarters stores under a half-million dollar expansion program has brought the total number of stores in the Sid Harvey group to 44, and more are planned.

All the new stores will carry the Sid Harvey line of replacement parts for oilburners, including Sid Harvey rebuilt parts. The new branches are located in Stamford, Conn., and Easton, Pa. Rebuilt as a branch was the former headquarters store in West Philadelphia, which was destroyed by fire March 30. A new headquarters store for Philadelphia has been built in Norristown, Pa.; for Norfolk, at 3540 Argonne Ave., Norfolk, and Garden City, L. I., at Oak & Chestnut Sts., Garden City.

Honeywell publishes Handbook on Airconditioning for Homes

INFORMATION on equipment, installation and automatic controls accumulated during the "growth" years of residential airconditioning is presented in a new book, "Fundamentals of Air Conditioning Controls," published by Minneapolis - Honeywell Regulator Co., Minneapolis, Minn.

The new handbook—first of its kind in the industry—is intended to fill a need that has developed due to the relative newness of airconditioning and the absence of standardization of equipment and practices.

It covers the field of airconditioning from basic refrigeration to today's advanced concepts and equipment for residential cooling, and includes complete sections on control applications and electrical distribution practices.

It is being made available to airconditioning equipment manufacturers, distributors, dealers and installers at the price of 50¢ a copy.

- Self-adjusting for wear — with sliding vanes.
- Compact and lightweight.
- Quiet operation at engine idling speeds.
- Proved Performance . . . Ask the man who has used Blackmer Rotary Truck Pumps through years of dependable service.
- Available in sizes from 1½" through 4".
- Capacities from 25 GPM through 500 GPM.

liquid materials handling ®

BLACKMER

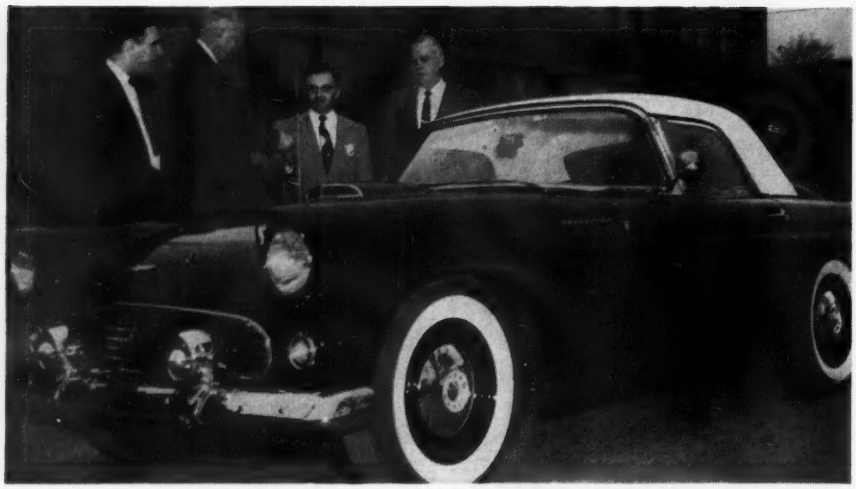
INDUSTRIAL, HAND AND TRUCK PUMPS, STRAINERS, PRESSURE CONTROL VALVES

BLACKMER PUMP COMPANY, GRAND RAPIDS 9, MICHIGAN

DIVISION SALES OFFICES

NEW YORK • ATLANTA • CHICAGO • GRAND RAPIDS • DALLAS • WASHINGTON • SAN FRANCISCO

See Yellow pages for your local sales representative



Lucky owner *of Ford Thunderbird is Sam Lipani, proprietor of Wholesale Heating Supply Co., Rochester, N. Y., who won the car as a door prize for 63 Dealerama sales meetings held by Eureka Williams Corp. in a recent trade "showcasing" of its new line of Oil-O-Matic and Gas-O-Matic heating equipment. Right, H. J. Allemang, Eureka Williams executive vice-president, turns the keys over to Lipani while Joseph Rizzo, Wholesale Heating Supply sales manager, far left, and J. M. Gleason, Williams division sales manager, far right, look on.*

?? Oil Tanks Leaking ??

STOP PRESENT AND FUTURE TANK BOTTOM LEAKS with

McGillis Stone Base Oil Tank Liner

Applied with *OIL IN THE TANK*. Acts *IMMEDIATELY*. Can be done at a fraction of the cost of a new tank and does a *MORE PERMANENT* job. No *INCONVENIENCE* or *INTERRUPTION OF HEAT* for your customers. A modest estimate indicates savings of over a quarter of a million dollars to home-owners and dealers in the Eastern United States and Canada.

WE ARE PREPARED TO PROVE IT or it costs you NOTHING

A very simple operation for a qualified oil burner man after instruction. Available only thru Instructing- Demonstrating Distributors.

CONVINCE YOURSELF	*Write or Phone our demonstrating distributor nearest you today*

Here's a partial list of our distributors.

J. Hollis B. Albert
Operator's Heat Inc.
1601 W. 41st St.
Baltimore, Md.

Joseph Collins
Frontier Oil Refining Co.
367 Northampton St.
Buffalo, N. Y.

Thomas A. Brown
Sentinel Oil Company
New Rochelle, N. Y.

Joseph Olney
Olney & Payne Bros. Inc.
Pawtucket, R. I.

Eastern Coal & Oil Co.
Allens Ave.
Providence, R. I.

C. W. Claflin Co.
55 Kilby St.
Boston, Mass.

William S. Briggs
Valley Oil Co.
Middletown, Conn.

Edward Burlingame Co.
704 Wealthy S. E.
Grand Rapids, Mich.

Kerr Oil Equipment Co.
104 Pleasant St.
Truro, Nova Scotia

Miller Oil Burners (Canada) Ltd.
733 Pembina Hwy.
Winnipeg, Manitoba

Steel & Engine Products Ltd.
Halifax & Liverpool
Nova Scotia

Exclusive General Distributor

L. JAMES DEWOLFE
73 Prescott St., Reading, Mass.

Write Today For Full Details

New Indianapolis Warehouse to expand Bryant Facilities

CONSTRUCTION has begun on a 100,000-square-foot, $700,000 warehouse, covering 2½ acres in north Indianapolis, for Bryant, heating and cooling equipment manufacturer, whose home plant is also in Indianapolis.

The warehouse, scheduled for completion in November, is the latest in a series of expansions and new facilities for Bryant which has other plants at Tyler, Texas, and New Lexington, Ohio. Also under construction in Indianapolis is a new general office building with research and engineering laboratories.

Perfection widens nationwide sales, distribution Channels

THE ROSTER of Perfection Industries' distributor outlets is increasing rapidly and covering most of the important market areas, the company has reported, with complete coverage the aim by the end of the year.

Perfection's present dealers continue to deal directly with Perfection's own sales representatives for the time being. Centralization of sales and service departments at the company's home office in Cleveland is designed to strengthen the sales effort and to speed up and insure more complete attention to service problems by direct factory contact.

As a result of the company's accelerated promotion program with home builders across the country, furnace and airconditioner sales increased 63.2% in the first quarter of this year, Donald G. Wright, general sales manager, reported.

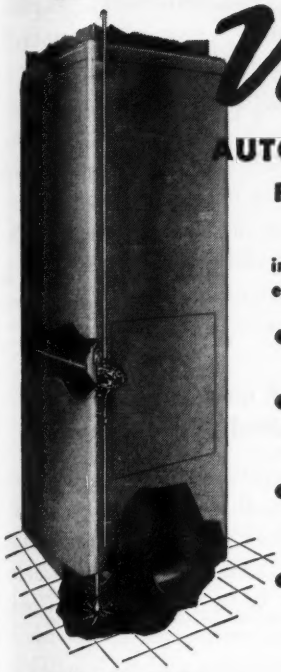
NEW! LOW COST FIELD TESTED

Vaporite

AUTOMATIC HUMIDIFIER FOR COUNTERFLOW STYLE FURNACES

in basementless houses with perimeter heating.

- Provides true winter air conditioning at low cost.
- Installs in minutes. All parts furnished for mounting on exterior of furnace casing.
- Balanced humidity assured by sensitive thermostatic control of water flow.
- Complete assemblies for furnaces with concrete floor plenums, or with crawl space plenums.



MODEL CF-500

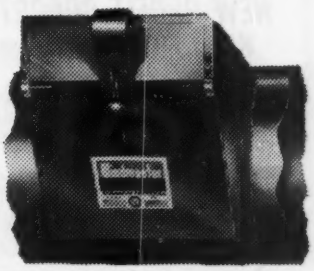
WRITE FOR CATALOG FO-9

AUTOMATIC HUMIDIFIER CO., Cedar Falls, Iowa

Windmaster The Modern Draft Control that's "QUICKER ON THE DRAW"

and "SILENT AS A SHADOW"

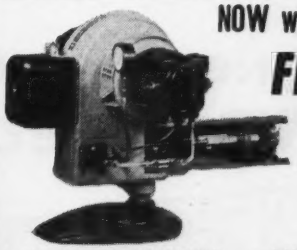
Windmaster Draft Controls
43 Vine St.
Columbus 15, Ohio



See Page 195

NOW with PerfXray Controls . . .

FLAMEMASTER



Relay is mounted on the burner (KO's stack temp. problems). Flame detector is mounted in the air tube. Does not interfere with air flow. No electronic tubes.

Investigate today.

- NO STACK MOUNTING
- NO STACK WIRING
- SAVES MATERIAL
- SAVES TIME
- NO CALL BACKS
- FASTER RESPONSE

SOUTH SIDE ELECTRIC SUPPLY CO.
5910 S. Halsted St.
Chicago, Ill.

METROPOLITAN EQUIP. SUPPLY CO.
827 W. 30th
Indianapolis, Ind.

TEWS DISTRIB. CO.
4153 N. 10th
Milwaukee, Wis.

FLAME-MASTER CO.
3118 N. Milwaukee
Chicago, Ill.

RAJAH TERMINALS

FOR OIL BURNER SPARK PLUG IGNITION CONNECTIONS
Made in Two Styles
CRIMP TYPE and SOLDERLESS

Code No. C/T #11

Code No. S-SOS #11

THE RAJAH CO., 35 Verona Ave., Newark, N.J.

A MOST USEFUL TOOL IN MAINTAINING A SUCCESSFUL BUSINESS

SAMPLE SHEETS UPON REQUEST

THE BRADFORD PRICE BOOK

QUINCY 69, MASS.

Serving the Plumbing & Heating Trades, over a 1/3 of a century

New ALE-BUILDER...

KING Fill Alarm!

(Whistles While You Work . . .
Stops When Oil Flow Should Stop)

9 SIZES* for every new tank installation

- Most complete line available for safe-level, storage tank-filling
- Speeds oil deliveries . . . day and night
- Design features save installing time, cost and materials
- Stops oil spillage and waste
- Prevents property damage
- Saves customer's time
- Requires no maintenance . . . nothing to get "out of wack"
- Builds goodwill
- Promotes customer's service and convenience

NEW PROFIT OPPORTUNITY FOR YOU

King Fill Alarm FIGURE #500

* 1¼" x 1" · 1¼" x 1¼" (UL) · 1½" x 1" · 1½" x 1¼" (UL) · 1½" x 1½" (UL) · 2" x 1" · 2" x 1¼" (UL) · 2" x 1½" (UL) · 2" x 2" (UL)

Galvanized cast gray iron with aluminum tube and whistle. Individually packaged. 25 of one or assorted sizes to carton. ORDER NOW . . . and start enjoying MORE profits, BIGGER profits on every one you sell.

O.E.M. OIL EQUIPMENT Mfg. Corp.

171 Derby Ave. New Haven, Conn.

FAST PUMPING WITH VIKINGS in EITHER *DIRECTION*

TRI-PAR Oil Company, Saukville, Wisconsin, makes good use of Viking Pump's reversible feature. The pumping system has a single suction line and a single discharge line which can be operated in either direction, eliminating the piping manifold. Speeded to deliver 325 G.P.M. the pumps can unload transports to storage and load delivery trucks from storage by merely reversing action.

Pumping units have lost no time from their operation during the three years they have been in service, and have handled approximately 25,000,000 gallons of gasoline and fuel oil in that period.

Perhaps Viking Pumps can speed your operation and simplify your pumping. Types and sizes for most industrial pumping. For information, write for Bulletin 56See.

VIKING PUMP COMPANY

Cedar Falls, Iowa, U.S.A. In Canada, it's "ROTO-KING" pumps

THE ORIGINAL "GEAR-WITHIN-A-GEAR" ROTARY PUMP

General Refractories plans new Factory in Gary, Ind.

TO SERVE the expanding mid-western industrial area, the General Refractories Co., Philadelphia, Pa., is planning to build a new refractory brick manufacturing works at Gary, Ind.

The new plant will be located on an 80 acre tract within the city. Many years of planning have gone into the blueprints of the structure which will incorporate modern design and efficient equipment. Expansion to keep pace with increasing demands has been allowed for on the site.

Offices of new Dunham-Bush firm located in W. Hartford

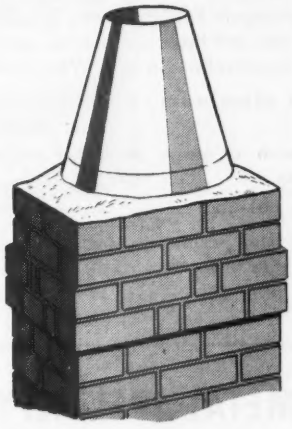
CONSOLIDATION of the C. A. Dunham Co. and the Bush Mfg. Co. went into effect on July 1, 1956. Offices of the new firm, Dunham-Bush, Inc., will be located in West Hartford 10, Conn. All business pertaining to the advertising department will be handled by William Schaller and Co., Inc., 1245 Farmington Rd., West Hartford, Conn.

Inquiries pertaining to C. A. Dunham Co. products and literature should be addressed to Dunham-Bush, Inc., 506 E. 2nd St., Michigan City, Ind.

Attendance prizes *were awarded daily to lucky visitors by Penn Controls at the recent* OHI *show in New York City. Winners included: Joseph Derman, Hillside, N. J.; H. R. Heiple, Westfield, N. J.; Gene Strickler, York, Pa.; George R. Bergold, Long Island. Above Alleen Aune, right, draws a winning name as Gloria Perna and E. B. Maire look on. Penn's new stack control was a feature of the equipment display.*

I give my customers the BEST!

The WIGWAM-THERMCAP



Eliminates:

- DOWN DRAFT
- SLUGGISH DRAFT
- DAMAGING ACIDS
- CARBON
- CREOSOTE
- RAIN MOISTURE
- FLUE GAS CONDENSATION

The WIGWAM-THERMCAP improves combustion — thus saves fuel. Looks good — *is* good. Keeps entire chimney *dry*. Has no moving parts to wear out. Saves costly repairs. Poor draft is dangerous; good draft means economy. The patented principle of WIGWAM-THERMCAP creates a draft-pull at the chimney top. ADAPTABLE TO ALL CHIMNEYS.

Special WIGWAM-THERMCAP representatives' contract available to qualifying dealers. Write for complete information, literature & instruction sheet.

BOSTON MACHINE WORKS COMPANY
Oil Heating Supplies Division, 7-17 Willow St., Lynn, Mass.

More for your Money in
MORYSVILLE

Morysville U-2 for ½, ¾ or 1 ton chassis

BEST BODY - BEST BUY

- 14 and 16 ga. Body Steel (14 ga. throughout for models rated 1 ton up—19 ga. doors)
- 12 ga. Diamond Floor Plate
- Heavy U-Channel Understructure
- Electric Welded throughout
- Telescoping Roof and Hinged Gate
- Full-length Hinges with Brass Pins
- Solidly Framed Doors and Panels
- Recessed, Spring-loaded Latches with Individual Locks or Master Locking Device
- Fendix Undercoating (No Extra Charge)

IMMEDIATE DELIVERY • Distributors in Principal Cities

"BODIES YOU CAN DEPEND ON" TO LAST INDEFINITELY

MORYSVILLE Body Works INC.
811 SOUTH READING AVE. BOYERTOWN, PENNA.

KEK IT! to be sure

KEK for STEAM

KEK for HOT WATER

KENITE LABORATORY
MADISON, NEW JERSEY

If I used fuel oil meter tickets, I'd order from Cromwell for 2 color printing and the fastest delivery in the industry.

Send for FREE catalog

CP CROMWELL PRINTERY
INCORPORATED
CHURCH AT BLEECKER ALBANY 1, N. Y.

NEW YORK TECH

America's Foremost School . . . Famous for teaching

OIL BURNER
INSTALLATION AND SERVICING

Also Courses in: REFRIGERATION & AIR CONDITIONING

Sept. and Oct. classes now forming

Remember **NEW YORK TECH** *whether you have*

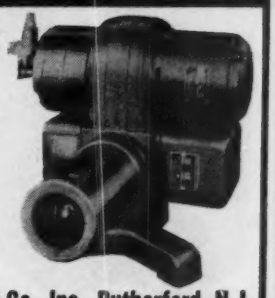
MEN TO TRAIN, or NEED TRAINED SERVICEMEN

Call or Write **NEW YORK TECHNICAL INSTITUTE** Est. 1910
A Division of N.Y. Institute of Technology
A non-profit educational institution
500 Pacific St., Brooklyn, N. Y. • MA 5-6220

For the discriminating fuel oil dealer - -
Every ELECTROL Burner installed is an
INVESTMENT in a GOOD, SOUND FUTURE

Insure your future oil business. Guarantee customer satisfaction with such features as:

- POSITIVE oil cut-off AT NOZZLE
- SMOOTH, SILENT SHUT-DOWN— No rumble
- OIL FILTER STANDARD EQUIPMENT



Exclusive dealership territories available.

ELECTROL BURNER MANUFACTURING Co., Inc., Rutherford, N.J.

Eddington

"A JOB WELL DONE"

When you install an Eddington Filter, thereby protecting the valuable investment of your customer, you will have earned his good will, his future business, and his whole-hearted approval of "A JOB WELL DONE".

- Sturdy light-weight aluminum construction
- Thorough filtration with a staggered surface cartridge
- Simplified installation design
- Completely interchangeable with other makes
- Water and acid-proof components
- Extra large sump for sludge and water separation

Insure your installations with positive protection against clogged nozzles and unnecessary shut-downs due to water.

Install an Eddington Filter on every job!

OHI

EDDINGTON METAL SPECIALTY CO.
Eddington, Pa.

Write for complete information and prices.

Calendar of coming Events

SEPTEMBER

7–8 —Association of Desk and Derrick Clubs of North America fifth annual convention, Roosevelt Hotel, New Orleans.

11–14—I-B-R School, Philadelphia, Gas Works, Philadelphia, Pa.

12–14—National Petroleum Association (annual meeting), Traymore Hotel, Atlantic City, N. J.

13—Connecticut Petroleum Assn., Shore and golf outing, Pine Orchard Club, Branford, Conn.

18–21—I-B-R School, Consolidated Gas Co., Boston, Mass.

19–21—Oil-Heat Institute of America, Inc., Board of Directors Meeting, Grove Park, Asheville, N. C.

21–22—Michigan Petroleum Assn., (semi-annual meeting) Grand Hotel, Mackinac Island, Mich.

23–25—Pennsylvania Petroleum Assn., Pocono Manor Inn, Pocono Manor, Pa.

23–25—National Association of Oil Equipment Jobbers (annual meeting and trade show), William Penn Hotel, Pittsburgh, Pa.

25—Greater Philadelphia Fuel Conference, annual outing and golf tournament, Manufacturers Golf & Country Club, Oreland, Pa.

25–26—South Dakota Independent Oilmen's Assn., Marvin Hughitt Hotel, Huron, S. D.

28–29—Georgia Oil Jobbers Assn., Inc., Lookout Mountain Hotel, Lookout Mountain, Ga.

26—API Executive Committee of the Board of Directors, Greenbrier Hotel, White Sulphur Springs, W. Va.

OCTORER

3—Plumbing and Heating Industries Bureau (annual meeting), Palmer House, Chicago.

8—Virginia Petroleum Jobbers Assn., Roanoke Hotel, Roanoke, Va.

9—Virginia Oil Men's Assn., (semi-annual meeting) Roanoke Hotel, Roanoke, Va.

11—Arkansas Independent Oil Marketers Assn., (annual meeting) Hotel LaFayette, Little Rock, Ark.

14–16—Tennessee Oil Men's Assn., (Fall Convention) Noel Hotel, Nashville, Tenn.

14–16—Mississippi Oil Jobbers Assn., (annual meeting) Buena Vista Hotel, joint confention with Alabama Petroleum Jobbers Assn., Biloxi, Miss.

14–17—North Carolina Oil Jobbers Assn., (fall convention) Pinehurst, N. C.

14–20—Oil Progress Week.

17–18—Indiana Independent Petroleum Assn., Inc., annual business meeting Severin Hotel, Indianapolis, Ind.

18—West Virginia Petroleum Assn., (annual meeting) Daniel Boone Hotel, Charleston, W. Va.

21–24—Empire State Petroleum Assn., Hotel Concord, Lake Kiamesha, Monticello, N. Y.

22–23—Jobber Management Institute, sponsored by the Pennsylvania Petroleum Assn., Pennsylvania State University, State College, Pa.

23–24—Nebraska Petroleum Marketers, (annual convention) Fontenelle Hotel, Omaha, Nebr.

30–Nov. 2—I-B-R School, Iowa State College Ames, Iowa.

NOVEMBER

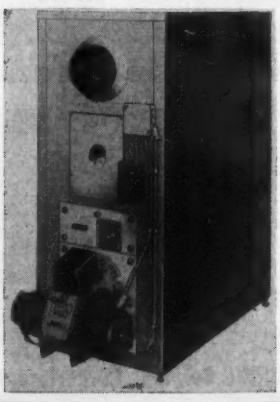
8–10—National Oil Jobbers Council, (annual meeting) Palmer House, Chicago.

12–15—API Annual Meeting, Conrad Hilton and Palmer House Hotel, Chicago.

26–30—22nd National Exposition of Power & Mechanical Engineering, Coliseum, New York.

28–29—National Warm Air Heating and Air Conditioning Assn., (annual convention) Netherlands Plaza Hotel, Cincinnati, O.

EX CEL COMPANY



INVITES
JOBBER INQUIRIES
TERRITORIES OPEN

QUALITY
FURNACES—COOLING
EQUIPMENT—WATER
HEATERS

Ex Cel Company
105 Beeson St.
Phone 336
Dowagiac, Mich.

Please send me information on the following:

( ) Oil Furnaces
( ) Gas Furnaces
( ) Summer Air Conditioners
( ) Electric Water Heaters
( ) Gas Water Heaters
( ) Oil Water Heaters

Name ..... Title .....
Firm .....
Address .....
City ..... Zone .... State .....

Replacement Transformers and interchangeable Bases

. . . 9 Transformers — 21 Bases . . .

Write for New 1957 Catalog

Dongan Electric Manufacturing Co.

2981 Franklin **Detroit 7, Mich.**

CUT BOILER CLEANING COSTS...

Clean-up with KENT!

Takes a Kent to make *soot scoot!* And — in the big Kent line — you'll find vacuum cleaners for any job you run into — every model packed with quality Kent features to help you cut messy clean-up time — remove soot — increase boiler efficiency. Clean with Kent — it really pays!

PRICE THIS ONE!
It's the Kent Viking. No fancy trimmings. It's *all cleaner* — to keep your cost down! Compact, powerful . . . light in weight, heavy on quality. Complete tool selection available.

KENT DOUBLE SUCTION
(not illus.)
Double fans for double power. Fully enclosed dust-bags. Extra 27 Gal. Dirt Tank. Just the vacuum cleaner you need for heavy duty boiler cleaning.

KENT MAIL TODAY!

The Kent Co., Inc., 434 Canal St., Rome, N.Y.

I want to eliminate costly soot in my customers' boilers. Send complete details on Kent equipment.

Name.....

Firm Name.....

Address.....

SOOT A WAY

CLEANS ALL OIL & GAS FIRED FURNACES — BOILERS

Harmless to A Heating Plant
Removes Soot Down to Metal

AVAILABLE—1½, 3, & 25 LB. SIZES

DEALERS—JOBBERS INQUIRE

AMBER-ROSE INDUSTRIES
3118 NO. MILWAUKEE AVE.
CHICAGO 18, ILLINOIS

6 PIECE ASSEMBLY SAVES YOU TIME!

Get more jobs done, increase your profits, install NU STANDARD KOLBKAST COMBUSTION CHAMBERS. Six piece tongue-and-groove assembly fits easily, quickly, snugly. This top quality chamber comes in five standard sizes to meet all your job requirements. Write for details.

KOLB REFRACTORIES CO. Meadow & Jackson Sts. Philadelphia 48, Pa.

It's a . . . KAM Exclusive!

Removable Coil — ALL Copper

TANKLESS HEATER

Defies Comparison--At ANY Price!

- Can be installed either vertical or horizontal
- REMOVABLE feature permits re-use of shell or coils
- Ideal for hard-water areas

KAM Our 50th Anniversary

KAM WATER HEATER MFG. CO. INC.
239-249 Alabama Ave., Brooklyn 7, N. Y.

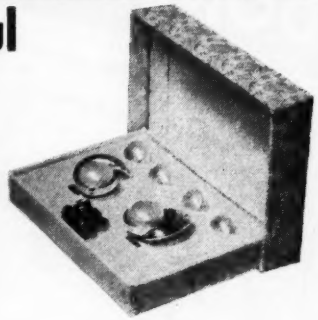
BUY ANY 6 CANS OF THESE FAMOUS

SOLDER SEAL

BOILER CHEMICAL TOOLS

This offer effective May 25, 1956, for a limited time only

...and get these beautiful Lady Ellen INTERCHANGEABLE MAGNETIC PEARL EARRINGS FREE! OF EXTRA COST



Actually 3 earrings in one! Pearl buttons are interchangeable from white to pink or blue!

2135

"Ask Your P&H Wholesaler"
RADIATOR SPECIALTY CO.
CHARLOTTE, NORTH CAROLINA

Fueloil skull Session

(*Begins on page 89*)

ample, in the case of a new installation from the less expensive price for 1½" pipe and fittings instead of 2". Also, the driver can be more relaxed while making deliveries.

In some localities, even though there are no restrictions against tight connections there remain a number of 2" fills. For these the driver merely carries an extra fitting to accommodate the 2" line.

Some localities, like Washington, D. C., make a 2" fill line mandatory and prohibit tight connections, apparently to eliminate any change of fracturing a storage tank because of undue pressure built up in the tank when it is not properly vented. However, with the fill signal the driver is warned immediately if the vent is not working, either when the whistle stops or does not sound at all. As a matter of fact, we have made slightly more than 2 million deliveries in Baltimore in about 20 years and we have yet to fracture a tank where a VENT-ALARM and tight connection were used.

It was the conclusion of our group that modern fueloil delivery system is dependent upon rolling stock of the type selected, plus the combination of the tight fills and fill signals, plus modern degree-day delivery systems. Also, they strongly favor preprinting of delivery tickets, pricing and mailing of completed tickets from the office. In other words, "Take the pencil out of the driver's hand."

Just a few of the advantages the group envisions are higher delivery rates per truck hour; lower incidence of spills; easier to obtain seasonal drivers; deliver oil automatically as desired whether occupant is home or not; reduce calculating errors, accounting troubles and possible customer dissatisfaction.

COMMENT: We experienced some difficulty with tight fill connections when seals on oilburner pumps let go at very high motor speeds and pumping pressures. We modified our delivery to 60 gpm and 80 lbs. pump pressure and the trouble disappeared.

❖

R. B. Sweet & Associates, Abington, Pa., has been appointed sales representative in southern New Jersey and throughout Delaware for the Pacific Steel Boiler Division, National-U. S. Radiator Corp., Johnstown, Pa.

A sub-office being operated in Philadelphia under the Pacific Division district sales office is being managed by *W. D. Braden*.

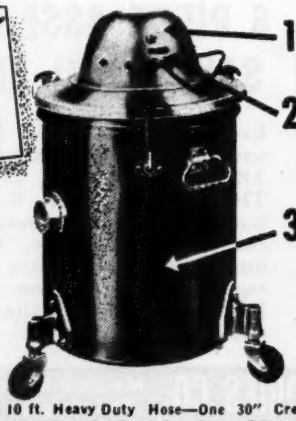
3 NEW Exclusive "Home-Run" FEATURES PUT EMPIRE WAY AHEAD in the FURNACE CLEANER League

DISTRIBUTORS NOTE
Several choice territories available. Write today for complete information.

When machine shuts off, baseball bounces and shakes dirt and soot loose from rayon bag.

Rayon Bag, Baseball and Draw String. $3.75 extra.

NEW! NOW AVAILABLE WITH BY-PASS MOTOR AT SLIGHT EXTRA COST



1. New type motor, more powerful, better constructed, gives 70 inches water lift at hose end.
2. Extra electric outlet on top of machine for connecting drop light. No hunting for outlets and dragging lengths of wire across the cellar floor.
3. Amazing new Rayon Bag with "baseball" device. EXCLUSIVE on Empire Furnace Cleaners. Outlasts dozens of paper bags. Keeps machine at top efficiency. Available at extra cost.

Manufactured by
EMPIRE CHEMICAL PRODUCTS CO.
10 Longworth Street, Newark 2, N. J.

Includes . . . One 10 ft. Heavy Duty Hose—One 30" Crevice Tool—One Bag Cage with Filter Bag—One Paper Filter.

NU-VAC FURNACE CLEANER Still only $99.50

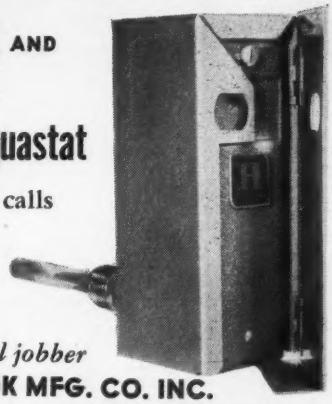
USE **AQUALOK** AND

Thermolok your

Thermostat & Aquastat

- Stop those nuisance calls
- Made to fit old & new Aquastats
- One key for both

Sold through your local jobber



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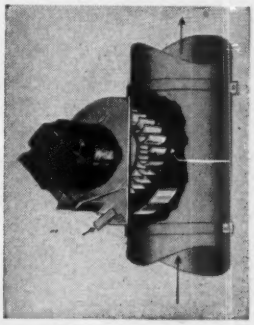
CURE DRAFT TROUBLES

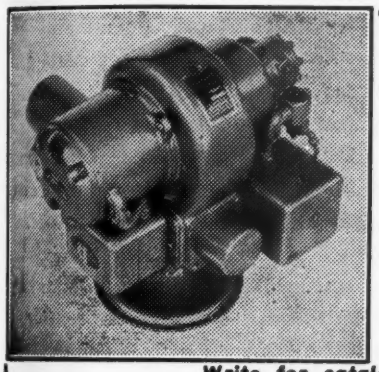
TJERNLUND
"Auto Draft" Inducer

No smokepipe obstruction, just cut a rectangular slot in smokepipe and band on.
Can be mounted horizontally or vertically.

Save Fuel, Service Calls, Customer Goodwill



TJERNLUND MFG. CO.
2140 Kasota, St. Paul 14, Minn.



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OIL SAVER

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TIMKEN BURNERS

Manufactured exclusively for us and guaranteed by

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Mounting Brackets included at no extra cost

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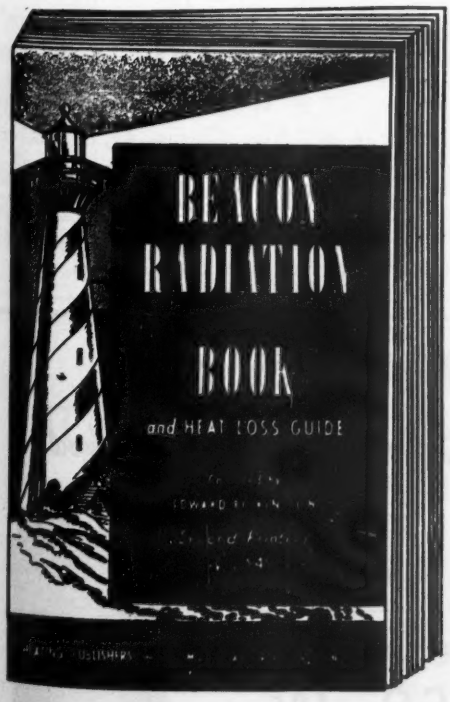
Estimating Heat Radiation Is Simple and Quick With

the
BEACON RADIATION BOOK



This pocket-size book shows the required radiation for all rooms of ordinary size with from one to three windows, one to three exposures, and every combination of walls exposed.

Other sections of the book show the square feet of radiation in each section of radiators of various styles and designs. A wealth of information on required radiation that can be carried easily in a pocket or brief case, or used as a desk reference. Thousands of Dealers and Heating Contractors use this book daily and find it a time saver.

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USED FUEL OIL TRANSPORTS FOR SALE

1946 Butler 5,800 gallon, 3-compartment, tandem axle, #M-233, $2,100.
1947 Butler 5,200 gallon, 3-compartment, tandem axle, #M-226, $2,200.
1946 Butler 6,400 gallon, 1-compartment, tandem axle, #M-237, $1,900.
1939 Fruehauf 4,002 gallon, 1-compartment, single axle, #K-1000, $725.
1940 Highway 4,057 gallon, 1-compartment, single axle, #K-1001, $725.
1950 Standard Steel 4,200 gallon, 3-compartment, single axle, #K-5003, $1,575.
1950 Trailmobile 4,580 gallon, 1-compartment, single axle, #K-175, $1,675.
1947 Quaker 5,175 gallon, 1-compartment, single axle, #K-135, $1,125.
1948 Frazier 5,200 gallon, 3-compartment, tandem axle, #M-306A, $2,250.
1943 Standard Steel 4,000 gallon, 3-compartment, single axle, #K234A, $975.

Choice of many others.

Wire, phone collect or write

BUTLER Manufacturing Company

Dept. G 624 South Michigan Avenue, Chicago 5, Ill.
Phone: WEbster 9-5035

Dept. G Room 602, 103 Park Avenue, New York 17, N. Y.
Phone: Murray Hill 3-9473

Risks in Type B Flues

(*Begins on page 93*)

doubt that a serious mistake has been made.

The process of developing standards is long and arduous. The development of requirements and the design of tests to determine compliance with them, involves—and properly—the solicitation of advice and counsel from all quarters—builders, heating engineers, manufacturers, installers as well as code authorities, research organizations and fire protection engineers.

In the case of the "Proposed Standard for Gas Appliance Flues," in spite of the fact that the first draft was circulated in January, 1952—almost five years ago — the final development seems to have been overly influenced by wishful thinking and heavy pressure from vent manufacturers.

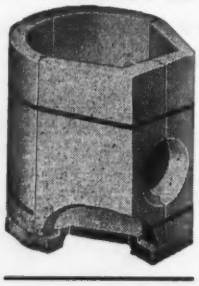
The remedy for a mistake is to correct it. In the case in point, the correction should be made promptly before the new standard becomes too firmly established. It is still a "Proposed" standard and, as such, should be simple to revise, amend and improve so that the vents for gas appliances will be as safe as factory-built chimneys for oilfired appliances.

It is earnestly to be hoped that building officials who now are being urged to amend their codes to permit the use of Type B gas vents will delay action until the "proposed" standard is given further and more searching examination and becomes a final standard for safety.

Those building officials whose codes have permitted the use of Type B gas vents and which now permit them will be well advised to examine in detail the present deplorable situation and, having satisfied themselves that the present situation permits a fire hazard, take appropriate action promptly to prohibit their continued use.

❖

C. B. Wilson & Associates, 7300 N. Bell Ave., Chicago 45, Ill., has been appointed sales representative for Gorton Valves in Illinois, north of Springfield, and in the Counties of Lake, Porter and LaPorte, Indiana.



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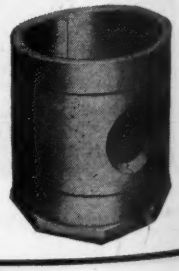
New "RED LINE" COMBUSTION CHAMBERS • *Economy Packed*

SMALLER CARTON

WRITE TODAY For Your NEAREST JOBBER

LESS WEIGHT



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MONOGRAM PRODUCTS CO., Inc.

731 NORTH 35th ST., PHILADELPHIA 4, PA.

GORTON VALVES
ESTABLISHED 1887

Available in 5 sizes for proper venting and balancing of each radiator, and two sizes for venting mains. There is a Gorton Valve that's just right for every radiator.

Ask your wholesaler.

GORTON HEATING CORP., CRANFORD, N. J.

H. H. Kieckhefer has been appointed sales manager of the Wheelco Instruments Division, Barber-Colman Co., Rockford, Ill. Kieckhefer, a graduate of the University of Wisconsin College of Engineering, has been assistant sales manager of Wheelco for the past several years. He has had more than 20 years of engineering and sales experience in the field of automatic controls.

E. B. Maire has resigned as vice-president and director of sales, Penn Controls, Inc., Goshen, Ind. He started with Penn in 1935 upon graduation from the University of Iowa, then managed the Chicago branch from January 1, 1936 until March 30, 1946. Next followed four years service with General Controls, after which Maire returned to Penn as vice-president in 1949; three years later he advanced to the position he held upon resigning. He has not announced his plans for the future.

Carl Watres, representative in metropolitan New York for Timken Silent Automatic, died on July 25 as a result of the collision between the Stockholm and Andrea Doria. Rescued with his wife from the Andrea Doria, Watres suffered a heart attack after reaching the Stockholm and succumbed.

Robert M. Gray, advertising manager of Esso Standard Oil Co., New York, N. Y., has been appointed chairman for oil industry participation in the American Heritage Foundation's 1956 "Register, Inform Yourself, and Vote" program. Gray, who has been active in oil industry committee work for many years, is past chairman and present director of the Advertising Federation of America. He also is a member of the executive committee of The Advertising Council which is cooperating with the American Heritage Foundation in the 1956 Get-Out-The-Informed-Vote campaign.

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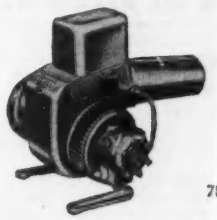
For customer satisfaction insist on the SHELL or BRANFORD designed COMUBUSTION HEAD



75 to 1.75 GPH

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- Easy to service and adjust
- Produces flame temperature 400 to 600 degrees hotter than conventional burners
- Oil savings up to 35% or more

Sold Through Wholesalers Only

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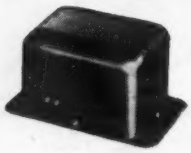

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Rotary Atomizing Burners
¾ to 12 Gph
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Factories in Brooklyn, N. Y. and Taunton, Mass.

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"K" FACTOR CALCULATOR. Handy, compact slide-rule. Eliminates cumbersome charts. Speedy. Accurate. Single setting gives both K-factor and degree day of usable oil. Only $5.50. Degree Day Systems, Dept. FO, 3930 58th Street, Woodside 77, New York.

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TURN YOUR SURPLUS INVENTORY of stoker, oil burner or gas controls into cash. Mail list and price to Box 885.

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Manufacturer of oil and gas heating equipment and air conditioning is looking for a Sales Manager or Vice President-Sales to head up existing national sales organization.

The man we want is presently employed as the top Sales Executive of a medium-sized company or the first or second man of a large one. He is looking for a challenging position with unlimited future. He must know the heating and air conditioning business, show a record of superior accomplishments, and be able to inspire and lead Territory Salesmen and Regional Sales Managers.

Salary no problem with the right man plus bonus based upon sales and profit results.

Tell all in first letter. All replies will be treated confidentially.

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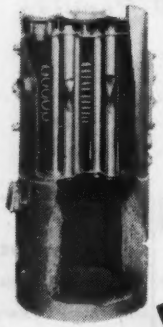
CLIP THE COUPON FOR PROFITS...



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Please send full details and prices.

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PETROLEUM PRICE CARDS. Don't stop to figure—just read. Eliminate costly errors. Card shows amounts from 1 to 999 gallons, and bridged from 1000 to 9000 gallons. Will pay you to send for our circular. Degree Day Systems, Dept. FO, Woodside 77, New York.

ALL WEATHER METER TICKETS imprinted with your name, address and telephone. 1000 sets (3 part) only $17.50. Allow 10 days in busy heating season. Advise make and model of truck meter. Degree Day Systems, Dept. FO, Woodside 77, New York.

WANTED: Manufacturers agent to sell well known make of oil burners in New York and New Jersey territory. Write to Bettendorf Oil Burner Company, Marshalltown, Iowa.

DECALS—Service, nameplate or truck lettering and trademark decals made to your order. Easy to apply, uniform, distinctive, economical for small or large needs. Write for catalog. Mathews Co., 827 S. Harvey, Oak Park, Ill.

WANTED Sales Manager for top jobbing line of oil burner parts, new and rebuilt. Capable of revitalizing entire sales organization. If you can do the job, this is your opportunity. Location Eastern Penna. Our men know of this ad. Box 1322.

WANTED Top shop man to run rebuilding shop for oil burner controls or pumps or both. Excellent opportunity, location Eastern Penna. Our men know of this ad. Box 1323.

AGGRESSIVE MANAGER of large burner department desires to make a change. Experience in both wholesale and retail operations. Resume on request. Box 1327.

SID HARVEY'S will pay the very best prices for your surplus oil burner, gas and stoker controls, pumps, motors, transformers, relays, circulators, low water cut-offs, etc. We buy all kinds—new-obsolete-defective, and will pick them up in areas near any of our 44 Sid Harvey stores, or send list to Sid Harvey, Inc., Valley Stream, New York.

ENGINEERING OPPORTUNITY with young, growing midwestern company. Liberal starting salary. Excellent advancement possibilities, profit sharing, retirement plan, congenial surroundings, in a new, modern, air-conditioned plant. Young engineer with experience in oil burner design and service. Commercial and industrial experience desirable but not required. Basic duties consist of fuel nozzle design and application. Write giving full resume of college work, experience and references. Address reply to Mr. E. O. Olson, Chief Engineer, Delavan Manufacturing Co., West Des Moines, Iowa.

WANTED-MANUFACTURER'S REPRESENTATIVE to sell well-known tank signals and gauges. Write advising territories covered and items handled. Ace Division of Kresno-Stamm Co., 1776 Broadway, New York 19, N. Y.

EXCLUSIVE TERRITORY FOR DIRECT DEALER SALES by salesmen calling on heating contractors with other lines, to sell Airflame Patent Oil Burners (CS-76-56 Approved. Tested more economical than any others). Also Complete line of gas conversion burners for any type of gas. Replies confidential, excellent commissions, complete literature and sales aids, lead on items, competitive prices, long term guarantees, complete installation instructions, freight prepaid. Please furnish resume first letter and state territory wanted. Airflame, 646 McAlister, Waukegan, Ill.

SALESMANAGER OF WHOLESALE AND RETAIL HEATING DIVISION interested in position as national salesmanager, Interested only in an aggressive concern. Excellent background. Experience in all phases of the heating business. For more details write Box 1328.

SHEET METAL AND HEATING BUSINESS established 11 years in northern Virginia for sale by owner. Excellent opportunity for sheet metal worker, plumber or heating engineer. Offering price—stock and equipment—current value approximately $9,000.00. Reply Box 1329.

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